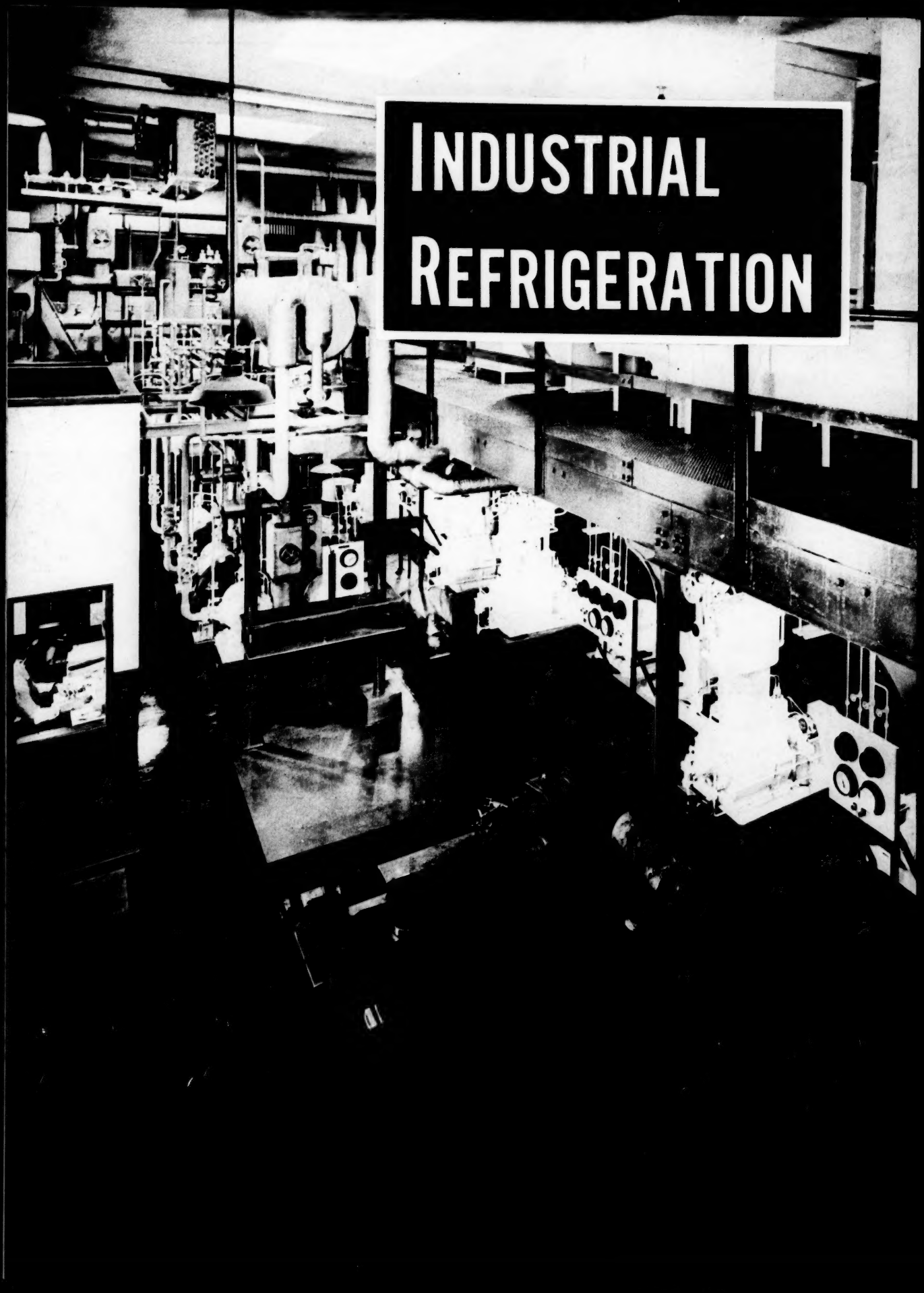
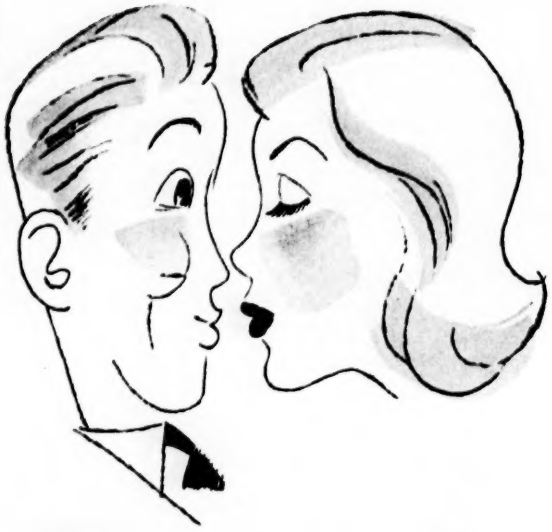
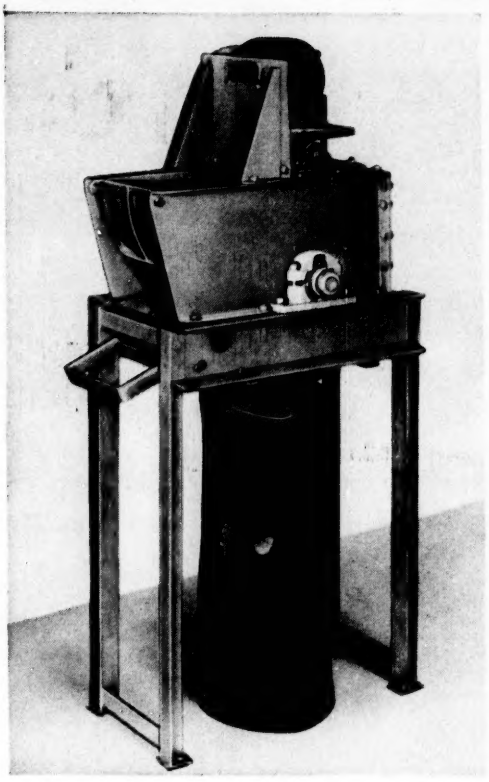

INDUSTRIAL
REFRIGERATION





Breaking Ice

is an easy proposition

with a GIFFORD-WOOD Type 540-L ICE BREAKER

A flip of the switch delivers all the crushed ice you need—up to ten tons per hour—directly into 25- or 50-lb. paper bags, or 100-lb. metal-bottom bags. Uniform size ice chips too. A handy manual adjustment at the front of the breaker easily sets the comb adjustment to crush ice in any one of three chip sizes, as desired.

The stand is stationary, but bagging spouts for tall or short bags are available at slight cost—a feature that completely eliminates shovelling.

Here is one of the most practical, efficient breakers ever designed, another *engineered* result of Gifford-Wood's more than 138 years of experience in the industry. It's made with the same strong, welded-steel construction that has made the G-W 540 a favorite for years.

Want more facts? Write today!
For full information on all G-W Ice Breakers ask for Bulletin 482.

SPECIFICATIONS

Capacity	6 to 10 tons/hour
Hopper Opening	12½" wide x 14¼"
Floor Space Required	24" x 34"
Height to Hopper Edge	4' x 8½"
3 comb adjustment: fine-medium-coarse with fine and coarse comb.	Product average ⅝" on fine up to 3" coarse.
Drive: 1-HP Motor with V Belt and chain drive.	
Electric Current	3 ph. 60 cy. 220 Volts
Shipping Weight	Approx. 700#

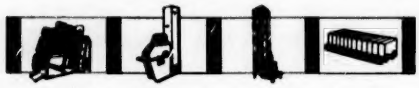
GIFFORD-WOOD CO.

Since 1814
Hudson, New York

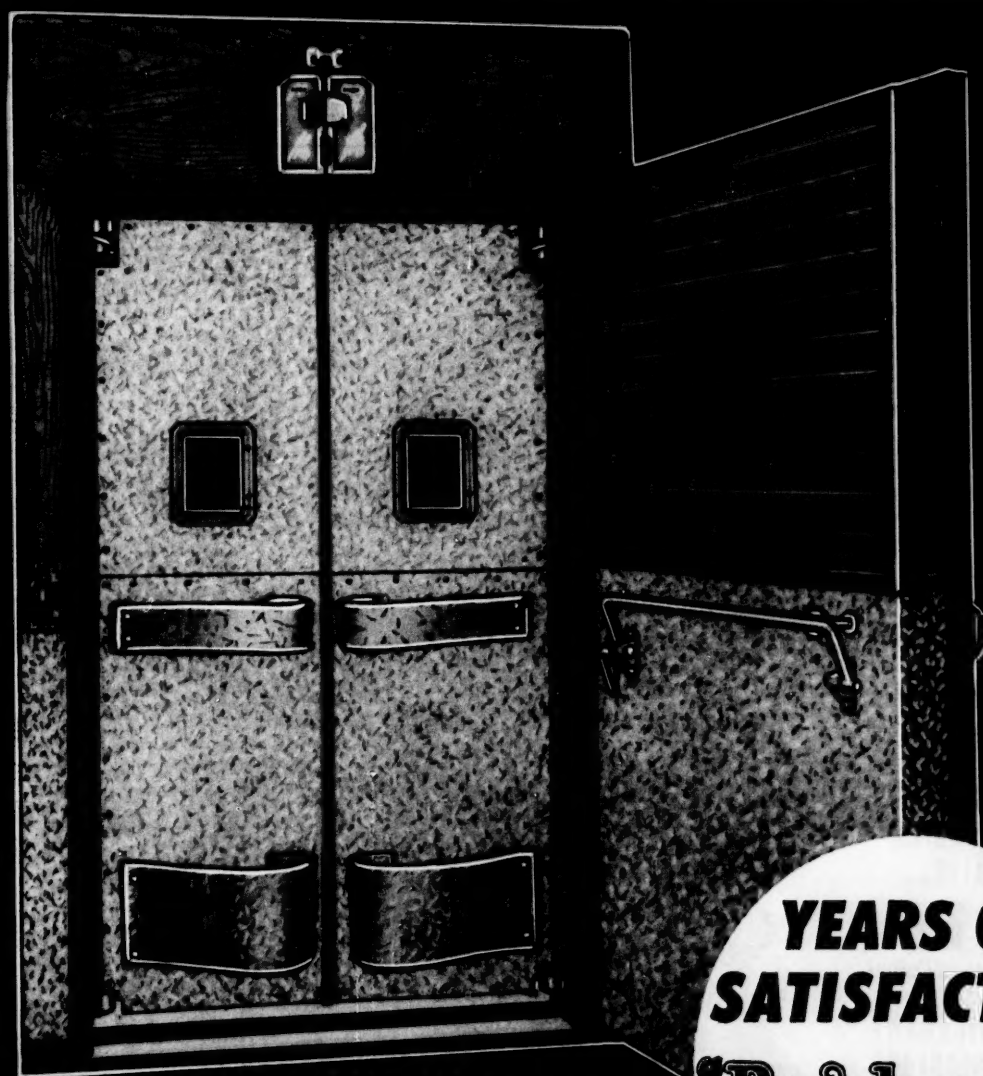
New York 17
420 Lexington Avenue

St. Louis 1
Railway Exchange Building

Chicago 6
565 West Washington Street



Cuber | Breaker-Elevator | Tiering Machine | Conveyor



VESTIBULE TYPE TRACK DOOR FOR TEMPERATURES 50 TO -20

YEARS OF SATISFACTION

"Butcher Boy"

Quality Since 1885

WHY "BUTCHER BOY" DOORS ARE THE FINEST REFRIGERATOR DOORS BUILT!

These Exclusive Features Furnished At No Extra Cost

DOOR STRUCTURE

New "X" Type Diagonal bracing
"INTERLOK" No Sag Corner Construction
Permits maximum insulation fill inside of door

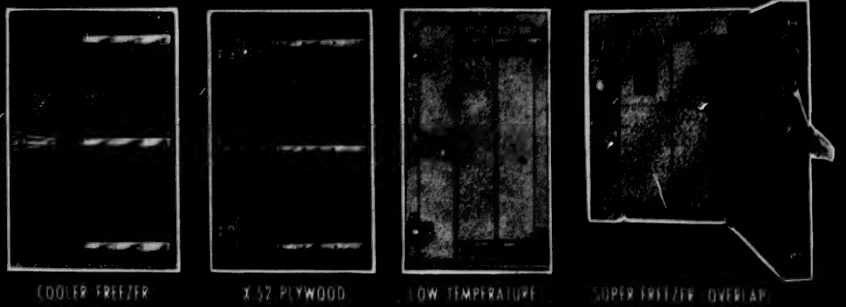
HARDWARE

20% to 150% more metal in vital areas
Alemite fittings for convenient lubrication
Sanitary, all working parts enclosed

APPEARANCE

Massive ¾" thick SOLID Douglas Fir front
Vertical specially milled alternating panels
Modern and more durable hardware applications to match doors

When a Man Thinks Twice ...He Makes Comparisons



COOLER FREEZER 50 TO -30 | X-52 PLYWOOD 50 TO 10 | LOW TEMPERATURE 10 TO -20 | SUPER FREEZER OVERLAP 0 TO -100

BUTCHER BOY REFRIGERATOR DOOR CO. HARVARD, ILLINOIS

for PEAK PERFORMANCE on All Refrigeration Systems

DIRECT EXPANSION AND FLOODED

buy SPORLAN right down the line!

CATCH-ALL *Filter-Driers*

SOLENOID VALVES

THERMOSTATIC EXPANSION VALVES

LEVEL-MASTER *Liquid Level Control*

REFRIGERANT DISTRIBUTORS

Get Them *at your* Sporlan Wholesalers

SPORLAN VALVE COMPANY

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EXPORT DEPARTMENT 89 BROAD ST., NEW YORK 4, N. Y.

LETTERS

(Letters to the editor are welcome from readers of INDUSTRIAL REFRIGERATION on any subject of general interest.)

Fort Worth Operation

Kansas City, Mo.

In our mail today we received a copy of the September issue of your publication. We wish to express our deep appreciation to you for an interesting and attractive article about our Fort Worth operation. . . We were delighted that you found it newsworthy and hope that your readers found it to be of interest.

J. GUY ROBERTSON
United States Cold Storage Corp.

Underground Storage Offers Modern Way

Kansas City, Kansas

We have a copy of your November issue of INDUSTRIAL REFRIGERATION containing the article about our new underground freezer warehouse.

We thought the article was extremely well written and accurate and we wish to thank you for your interest in our project. It is our belief that this method of storing frozen foods will soon make multi-story warehouses obsolete, and we further believe that we have improved upon underground storage facilities to the point where we have reached the optimum in efficiency both materials handling-wise and engineering-wise.

We plan to have a large formal opening party sometime after the first of the year, and we would very much like to have you visit us at that time.

LEONARD H. STRAUSS
Inland Cold
Storage Company, Inc.

Icy Fingers Ran Down Her Spine

WHEN Miss Barbara Grosky went to a vending station in Annville, Pa. to get some ice, she deposited a coin as usual, but instead of a bag of ice, a hand slid down the chute and beckoned to her. A bit unnerved she ran to a nearby service station where keys for the machine were kept and then watched a service attendant open the ice-dispenser. Inside was Ralph W. Hopple of Annville, who was repairing the big machine when its door swung shut, trapping him.

Industrial Refrigeration

formerly **ICE AND REFRIGERATION**
Now in its 63rd Year of Publication
J. F. NICKERSON, FOUNDER

Vol. 127 **December, 1954** **Number 6**

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The Cover:

Engine room of new Spreckles-Russell dairy plant, San Francisco, California. The Fuller F. E. S. rotary boosters just outside the engineer's office handle first stage compression. Six reciprocating machines under second level walkway are second stage units. A liquid intercooler is the insulated vessel above the rotaries. Story on page 16 of this oldest West Coast independent dairy company.

Published Monthly by NICKERSON & COLLINS CO.
General Offices: 433 N. Waller Ave., Chicago 44, Ill. Telephones: AUstin 7-1303-04-05

H. T. McDERMOTT, EDITOR AND PUBLISHER — E. R. CURRY, MANAGING EDITOR — J. R. KELAHAN, TECHNICAL EDITOR — H. D. BUSBY, ASSOCIATE EDITOR
ADVERTISING—O. RHODIUS ELOFSON, DIRECTOR — EDW. DAVIESON, Advertising Representative
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INDUSTRIAL REFRIGERATION, Vol. 127, No. 6 Published monthly at 433 N. Waller Ave., Chicago, Ill., U.S.A., by Nickerson & Collins Co. Yearly subscription in the U. S., $2.00 per year; other countries, $3.00. Single copies, 25 cents.

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Industrial Refrigeration is indexed regularly by Engineering Index, Inc., and is microfilmed for library use by University Microfilms.

What's New

MACHINERY
APPLIANCES • PROCESSES

Plastic Cork No-Drip Tape

A PLASTIC cork pipe covering, known as "No-Drip" that stops condensation drip of cold water pipes, has been introduced by J. W. Mortell Company, Kankakee, Illinois. It is packed in a colorful new package as illustrated. The package contains enough tape to cover critical drip areas, even valves, tees, joints, angles, etc., or a straight 10-foot section of ½-inch pipe. This self-starting plastic cork tape, it is claimed, is easy to apply, winds spirally around pipe without brads, fasteners or adhesives.

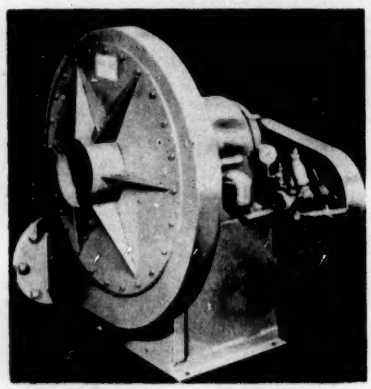
Turbo Pressure Blowers

A LINE of turbo pressure blowers is introduced by The Chicago Blower Corporation, designed and tested to produce a quiet pressure fan because of its simple design and rigid construction. They are described as maintaining a constant pressure while supplying varying volumes of air. Available in single and double inlet fans; direct or belt-driven.

Wheels are of light weight, high strength construction, statically and dynamically balanced to insure smooth, vibrationless performance. Exhauster Type "S" wheel is used in single inlet fans and Blower Type "D" wheel is used in double inlet fans.

Housings are of all-welded, heavy steel construction. Front and back plates are rigidly braced with gusset plates. This method not only eliminates all transmissional vibration and "breathing", but also makes these fans the quietest in the high pressure field. Welded design makes it possible to utilize a "flat casing" type wall.

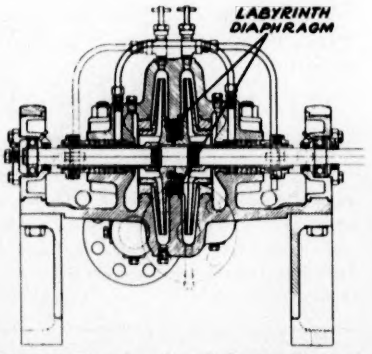
Bases are of heavy welded construction with triangular back support. Any type of special base to meet individual operating requirements can be furnished. Inlets have been so designed as to minimize "shock loss" which reduces both horsepower and noise level. Outlets are large, which permits low velocities, and reduces friction loss to a minimum when piped to full size. They can be furnished with an oil pump attachment.



New Chicago turbo-pressure blower with oil pump attachment

New Two-Stage Pumps Announced by Goulds

A NEW series of two-stage pumps for handling clear liquids has been announced by Goulds Pumps, Inc., of Seneca Falls, New York. These pumps, designated as the Fig. 3305 line, are available in five sizes, providing heads up to 1,000 ft., and capacities up to 1,000 gpm. Opposed impellers insure hydraulic balance, and thrust balance is achieved by the use of a unique new labyrinth diaphragm.



Cross-section drawing of the Goulds two-stage 3305 pump, showing labyrinth diaphragm for achieving thrust balance.

The pumps were designed with special attention to operating efficiency and ease of maintenance. The casing is horizontally split, and the interior can be inspected, and the rotating parts removed and replaced, without disturbing piping connections. Bearing spans have been kept short, resulting in a space saving of as much as 50 percent in comparison with other pumps of equivalent head and capacity.

Wide interchangeability of parts has been provided, so that spare parts inventories can be kept at a minimum. For example, only two shaft and rotating parts assemblies are necessary to cover all five pump sizes. Furthermore, many of the parts of the Fig. 3305 pumps also are interchangeable with the Goulds Fig. 3405 single-stage pumps which were introduced a year ago.

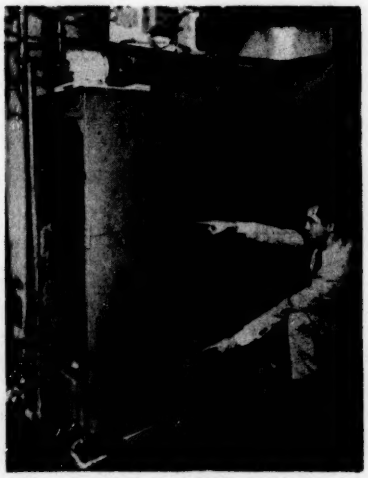
The direction of rotation of the new pumps can be changed in the field, without any additional parts. This is made possible by a patented locking shaft sleeve which also is used in the Fig. 3405 pump. The new pump can be supplied with either conventional stuffing boxes, or with mechanical seals, as desired.

Standard features of the Fig. 3305 pump include sealed bearing housings, protecting bearings against moisture and dirt, cowl-type glands suitable for use with quenching liquids, stainless steel impeller keys, Teflon water-seal rings, corrosion resistant gland bolts, renewable stuffing box bushings, and die-formed packing.

New Cooling Towers For Crowded Spaces

A "TAKE APART" cooling tower has been designed by Halstead & Mitchell to be installed in crowded basements reached by narrow stairs, or on roof tops, where the expense of a rigger for hoisting can be eliminated, thus permitting the use of water-cooled air conditioning in quarters never before considered mechanically or economically feasible.

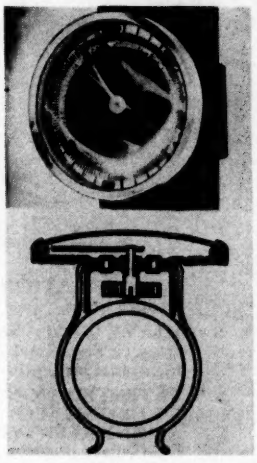
These cooling towers are shipped assembled, and then are separated into several sections by easy-to-get-at bolts. Parts may then be carried on narrow stairs, or on a small elevator, or hoisted to the roof without the expense of a rigger. They are manufactured in a size range from 5 through 30 tons. Drive shafts and fans are made of stainless steel, and the housing is protected with vinyl zinc, vinsynite and chlorinated rubber. The result is protection against corrosion of metal parts which may be exposed to moisture.



This 15-ton "Take-Apart" cooling tower was installed in the crowded basement of a Rand-Rexall drug store in Pittsburgh. A company representative shows the points at which this tower was divided to bring it down a narrow stair well into the basement.

Pipe Surface Thermometer

NEW Pipe Surface Thermometers to be used to obtain the temperature of pipes and tubes from ½ to 2 inches in size are announced by The Pacific Transducer Corp., Los Angeles, Calif. The thermometer is quickly fastened to the pipe by means of a spring clip without the use of any tools. The spring is merely pushed over the pipe by hand and snaps into place. The temperature sensitive element is a cali-



New Pipe surface Thermometer and string clip

brated bimetal and is closely coupled thermo-dynamically to the pipe. The accuracy is plus or minus 2 F over the entire range of the thermometer, which reaches stability within five minutes. It is not necessary to open any pipe joints to install this thermometer. The bimetal element is protected by a copper cup which is made to fit the pipe closely. The Pipe Surface Thermometer comes in two ranges, one from minus 50 F to 250 F, and the other from 70 to 370 F. The thermometer dial is 2 inches in diameter.

Flexible Rubber Doors

A NEW type of flexible rubber door has been developed, is now available, and is of particular value in plants where refrigeration is employed. They are being used as flapper doors in refrigerator rooms,

Rubber door made by Candor Engineering Company

developed by the Candor Engineering Company, Montclair, N. J.

These are the basic advantages of flexible rubber flapper doors. (1) The rubber sheets retain their flexibility under very low temperatures. (2) Since the aperture when the doors are opened is only as large as the person or load going through the doors, the escape of refrigerated air is held to a minimum—saving money. (3) Flexible rubber doors absorb the most severe shocks easily—they are practically immune to damage that is common with solid doors—they save money in repair costs.

Flexible rubber doors are made with tough rubber sheets, except where they might be used in plants and exposed to oil or grease, then the manufacturer uses Neoprene, reinforced with layers of strong cotton duck. These rubber sheets are suspended in inverted L shaped steel frames, operating on double acting spring mechanisms inserted in the upper part of the vertical steel frames. Consequently, the doors swing either way, and return automatically to their closed position.

Electric Heating Element

A NEW type of copper-clad electrical heating element said to offer advantages in ease of installation, precision heat control and wide application has been announced by The Continental Electric Equipment Co., Cincinnati, Ohio. Heatflex mineral insulated heating unit can be *wrapped around* almost anything, *immersed* in any solution non-corrosive to copper or *enclosed* in any material.

The new heating element consists of a seamless sheath of self-annealing copper in which is enclosed a pair of copper resistance wires, spaced and insulated by a tightly packed magnesium oxide. The element can be flattened without damage to or disturbing the resistance wires. It can be formed to any surface, tanks, pipes, valves, switches without tools. It can be operated at any temperature from below freezing to 482 F and controlled to precise temperatures. Among the advantages listed by the manufacturer are: heat-resisting, non-inflammable, mechanically rugged, self-grounding, neat and attractive, compact, flexible, waterproof, chemical resistant, resistant to thermal shock and non-deteriorating because of weather or time.

It has been used and proved for a wide range of applications. Outstanding success has been found in keeping viscous materials like heavy oils, asphalt, molasses, paraffin flowing; removing or preventing ice formation on outdoor equipment, steps, walks, driveways, platforms, catwalks, ladders. It has been used to heat tank car contents for quick dumping, to prevent freezing of water seals on gas holders and for controlling ice formation in refrigerated rooms. In standard construction, it is less than a quarter-inch in diameter. "Hot" and "Cold" sections can be produced in any length to suit job requirements. Fittings on the element are slightly larger in diameter and are available for tanks and pressure vessels as well as for connection to electrical junction boxes or other enclosures.

New Lubricant Seal

A NEW lubricant-seal for all types of threaded fittings, to afford savings on materials and man-power, has been developed by C. H. Dragert Company, Dallas, Texas. A single application of this new thread compound it is claimed, provides permanent lead-plating, island high, permitting repeated, easy, quick assembly and disassembly of any size threaded con-

New Lubricant Seal made by L. H. Drager Company

nections without re-doping, and without damage to threads. It has passed tests as a lubricant-seal for aircraft and marine equipment; hydraulic lines; drill pipe and tool joints; nuts and studs on all types of pumps and engines; large plug valves; fork-lift and elevator guide channels; heavy, open-worm gears; line grooves and sheaves; and as a packing sealing and steel-cable lubricant.

The compound is warranted anti-gall, non-corrosive, non-hardening and leak-proof and resistant to steam, gas, oil, air, chemicals, alkali, acids, ammonia and all hydrocarbons, under the most punishing pressures, temperatures and vacuums. It is packed in 2-pound and 5-pound pails, also 40-pounds and 80-pounds.

Frick A F Safety Valves

THE NEW Frick Type A F safety valves have been tested for capacity and approved for use with various refrigerants, according to recent bulletin. An improved design, it is stated, enables these valves to handle between two and three times as much gas as previous types of the same pipe size.

Type AF valves have the seat and moving parts made of stainless steel: there is nothing to "rust shut." All parts are accurately finished. The parts are self-aligning: a ball joint distributes the spring pressure evenly over the bottom and seat.

This valve closes tightly after it opens; if scale catches under the bottom, the valve can be reseated with a light tap on the plunger stem. This is best accomplished by installing a dual-outlet valve below a pair of safety valves; the pressure can then be relieved under either valve when reseating is necessary.

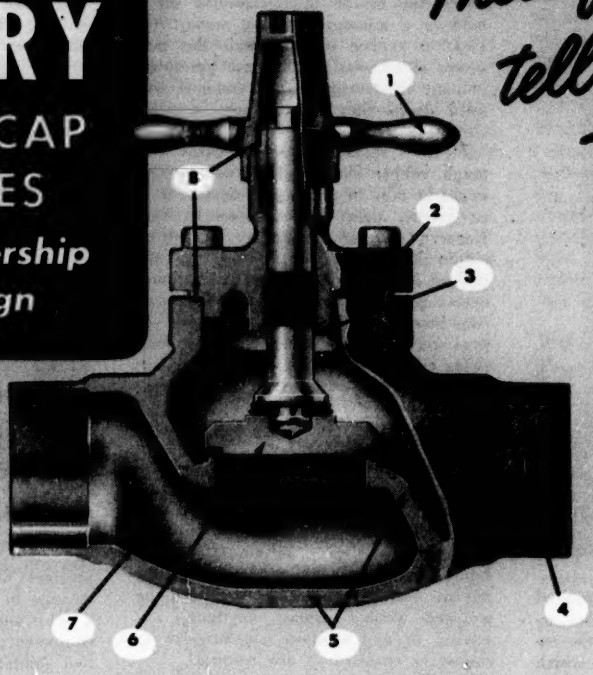
Back of the Unprecedented demand for

HENRY

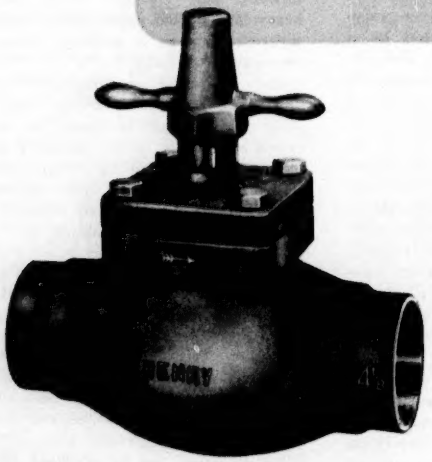
WING CAP VALVES

is a Leadership in design

These features tell the story



1. WING CAP—with stem operating socket.
2. BOLTED BONNET for maximum safety.
3. BACK SEATING—can be repacked under pressure.
4. VALVE SIZE IDENTIFICATION—on Bronze body.
5. HEAVY WALL—Bronze alloy or Semi-steel for maximum strength.
6. PATENTED, NON-ROTATING SELF-ALIGNING SWIVEL DISC. Easy positive sealing. Minimum seat wear. Chatterproof.
7. FULL CAPACITY FLOW THROUGHOUT.
8. FULLY RETAINED POSITIVE SEALING GASKETS.



Available in bronze alloy and semi-steel types. Sizes range: ⅜" to 5⅛" O.D.S. and ½" to 2" F.P.T. Flanged valves available with brass O.D.S. or steel butt weld adapters, sizes 1⅜" to 5⅛".

Year after year Henry Wing Cap Valves become more popular on both government and civilian refrigeration and air conditioning installations because of the high inherent quality of the valves and their features of design and construction. No other similar product carries such a universal recommendation by wholesalers or is in such wide demand among contractors and service men where the use of a wing cap valve is indicated.

HENRY VALVE CO.

Melrose Park, Ill. (Chicago Suburb)

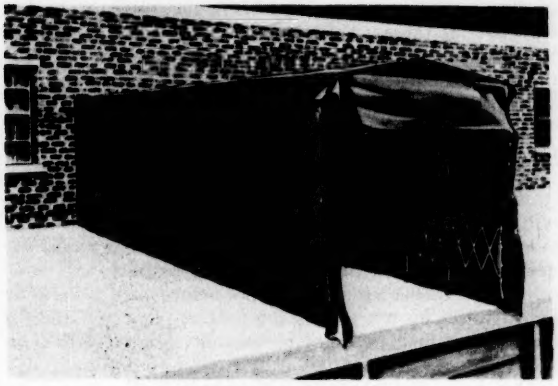
Cable: HEVALCO, MELROSE PARK, ILLINOIS

Valves, Driers, Strainers, Control Devices and Accessories for Refrigeration and Air Conditioning and Industrial Applications

New Loading Dock Shelter For Extra Deep Docks

A NEW loading dock shelter "X-Tra-Span" has been introduced by Atlas Industries, Chicago. This model was designed for use on extra-deep loading docks, or it can be used to connect adjoining plants.

X-Tra-Span, rolling on special wheels, literally snakes out from the shipping room door across open docks to truck or box car. When not in use, it folds compactly back around shipping room

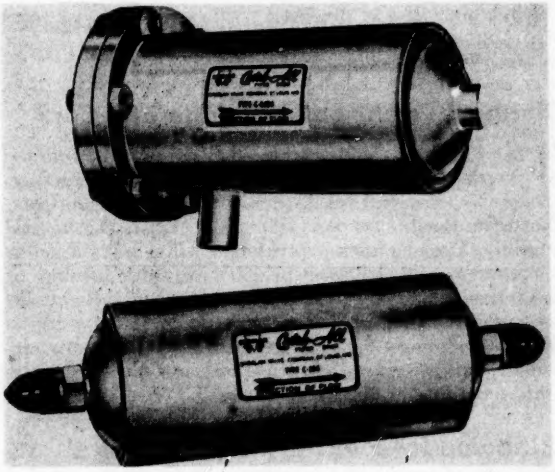


Atlas Loading Dock Shelter

door. It is pointed out that while there is an obvious need for X-Tra-Spans in existing plants, future plant designers and builders could save a good deal of money by using X-Tra-Spans instead of much more costly loading dock roofs. It is so designed that it is completely portable and can be moved from door to door; thus, even the largest shippers can get by with a minimum of X-Tra-Spans and still have adequate bad weather protection for men and materials. They can be custom-built to any length.

Sporlan Adds to Line of Driers

TWO new series of Catch-Alls have been added to the Sporlan line of driers, it was announced by the Sporlan Valve Company. The C-R 424 is introduced to provide a replaceable core type drier in the small capacity range. This new model is used on air conditioning systems up to 5 hp. and has a nominal



Sporlan Dryers CR 424 (above) and C 304 (below)

capacity rating of 3 hp on systems operating below 32 F. The core of the C-R 424 contains 42 cu. in. of effective desiccant volume, 67 sq. in. of filtering and is easily replaced in the Catch-All shell. This model is available with ⅜ in. ODF-½ in. ODM connections. The new 300 series will be used on air conditioning systems up to 7½ while carrying a nominal rating of two tons on systems operating below 32 F.

The Case Of: THE FACE ON THE COLD ROOM DOOR

NO MYSTERY, really! Facts . . . cold facts, that's all! You see, the case on this Taylor Temperature dial is fume and moisture proof. It can be face or flush mounted, panel or field.

The dial is only 6″ in diameter, but bold numerals and graduations make it easy to read at a glance.

Mercury, gas, organic liquid (Monolex) or vapor actuated systems to fit nearly every type of application. Ranges from minus 125°F. to plus 1200°F.

New movement design minimizes linkage error, means more dependable accuracy throughout the range span. **Ideal for Brine Lines, Brine Tanks, Ammonia Lines, Cold Storage Rooms, Refrigerators, Bunker Rooms, and Ice Cream Hardening Rooms.**

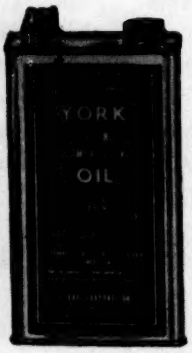
Also available for pressure and load measurement.

Ask your Taylor Field Engineer, or write for **Bulletin 98214.** Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

YORK REFRIGERATION OILS:

sta-bility



Heat is the great enemy of unstable oils, and compressors are running *hotter*.

Operating speeds *and* temperatures have been rising steadily in recent years, and engineers expect this trend to continue.

If the oil you use to protect your investment in equipment needs one thing, it's *stability*—and York Oils have it!

York Oil is available through York District Offices and Authorized Jobbers

IT ALWAYS PAYS TO USE YORK ACCESSORIES AND SUPPLIES

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HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

PRESS BRIEFS

Miners Ice & Fuel Buys American Service Plant

NEGOTIATIONS have been completed at Lawrence, Kansas for the purchase by the Miners Ice & Fuel Company of Joplin of the plant and other physical assets of the American Service Ice Company plant in Joplin. Included in the physical assets of American purchased by the Joplin firm are several ice depots scattered over the tri-state district and several in Joplin. Willard L. Butts, president and general manager of Miners said that Edward W. Atteberry, who has been manager of the American plant will be retained by his company to continue in charge.

Mr. Butts said they plan to use the American plant only for a limited type of cold storage, including certain kinds of vegetables and other commodities which require both cold and moisture. The company will continue to give the same service as before with a view to improving it by remodeling the present plant and adding other improvements. It has an output capacity of 72 tons a day.

The American Service Ice Company had operated its Joplin plant for many years. It is owned by the company under that name with headquarters in Atlanta, Ga., which operates approximately 85 plants throughout the southeast.

Milwaukee Ice Storage House is Burned

A STORAGE house, formerly used for ice storage, owned by the Random Ice & Coal Company, Milwaukee, was a complete loss by fire, October 24. The damage was estimated at $600,000. The building had been rented by the Blatz Brewing Company for storage. At the time of the fire it had some 600,000 cases of empty Blatz beer bottles. Cause of the fire was undetermined. The building measured 120 x 180 feet and 40 feet high. It was the last of Milwaukee's old ice storage houses but had not been used for storing ice for several years.

Northern Pacific Builds Refrigerator Cars

THE last of 500 refrigerator cars built for the Northern Pacific Railway were expected to be completed by the end of November, J. Y. Blumstrom, Northern Pacific general agent at Yakima, Wash. said recently. The new cars, representing a five million dollar investment, will be used primarily in the hauling of fresh fruits and vegetables. Improvements include six-foot wide doors, all-steel herringbone floor racks to permit loading by fork lift trucks, more efficient air circulation and overhead electric fans, and heavier insulation, according to Mr. Blumstrom.

Alabama Ice Plant Expands

THE capacity of the Meridian Street plant of the Huntsville Ice and Coal Co., Huntsville, Ala. will be doubled when a new building now under construction there is put to use. James F. Watts, president of the company, said the new building will enable an increase of capacity from 15 tons of ice a day to 30 tons in a 24-hour period. Of concrete block and steel construction, the building will measure 36 feet wide by 160 feet long.

Foremost Dairies Buys American Dairies

FOREMOST Dairies, Inc., has contracted to purchase the outstanding stock of American Dairies, Inc., Kansas City, Mo., it was announced recently. American Dairies has thirteen operating subsidiaries in Missouri, Kansas and Arkansas. The company's sales are now at an annual rate of approximately $25 million. It has 100,000 shares of common stock outstanding. It is reported that the tentatively agreed purchase price will value the common of American Dairies at about $7 million.

Acquisition of American Dairies and its subsidiaries with Foremost rounds out the South-Central area by adding three States to the expanding nationwide coverage of Foremost and is in line with Foremost's policy of extending its activities in those sections of the country showing the greatest economic growth, Lynwood H. Smith, chairman of the board and P. Reid Oliver, president of American Dairies, stated.

Acquisition of the stock, when approved by Foremost's board of directors, will be financed in part through private sale to institutions of $5 million of authorized but unissued $100 par preferred stock 4½ percent series, at par. Foremost's gross sales are running at a rate over $300 million a year, the announcement said.

Trucking Industry Supports Ruling on Agriculture Products

The contention of the Interstate Commerce Commission that a wide variety of manufactured farm products may be transported by motor trucks free from the ordinary regulation by the ICC was supported in a brief filed by the American Trucking Associations, Inc., with the U. S. District Court for the Southern District of Texas at Houston.

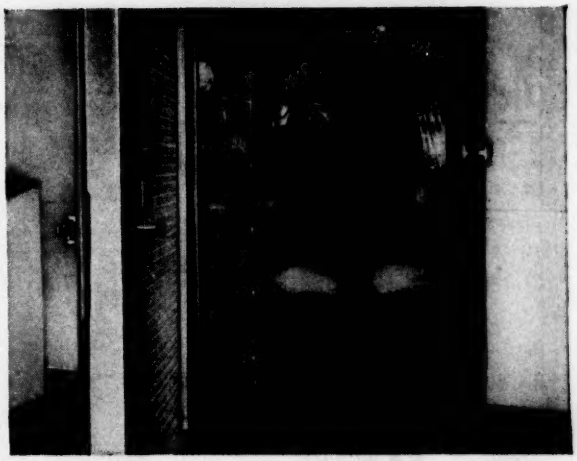
In two civil actions, both captioned Frozen Food Express V. United States and ICC, the plaintiff and the Department, as intervener, are seeking to upset rulings by the Commission that fresh and frozen meat, fresh and frozen dressed poultry, shelled nuts, cotton linters and several other processed agricultural commodities were not embraced within the partial exemption from regulation accorded by Section 203 (b) (6) of the Interstate Commerce Act.

Warehouse Provides Plant Tour for Teachers

A VERY successful Business-Education day was conducted at San Jose, Calif. Local teachers toured the plant of the Security Warehouse & Cold Storage Company while G. F. Dodson and his staff pointed out the many highlights of refrigerated warehouse operations. They were shown the freezer storage rooms, the quick freeze operations, the engine room, etc. In addition short talks were given on personnel training, warehouse problems and the plant's safety program. The teachers enjoyed the visit tremendously and went away with a much better understanding of the refrigerated warehouseman's vital role in the local economy.—NARW Cold Facts.

Frozen Food Plant Expands

THE Fayetteville, Ark. plant of C. A. Swanson & Sons, Inc., nationwide distributors of frozen foods, is being enlarged at a cost of $150,000. Purpose of the expansion is to provide for the production of quick frozen fried chicken dinners. The plant's poultry processing capacity is being increased to 70,000 birds per day and employment at the plant will be increased from 500 to 750 workers.



SUPER MARKET EXPANDS USE OF CORKBOARD INSULATION

After its experience with the effectiveness of corkboard for the insulation of low-temperature spaces, Albany Public Markets, Inc., made two additional installations—one in 1951, the other in 1952. No maintenance work of any kind has been required on these installations since the erection jobs were completed by United Cork Companies' erectors.

Engineering design of the installations was worked out by the Albany branch office of United Cork Companies in cooperation with Albany Public Markets, Inc. Architect for the buildings was Edward J. Toole.

Advantages of United Cork Service

The availability of complete engineering and erection service from nearby branch offices is one of the major reasons why thousands of operators of refrigerated spaces have selected United Cork Companies' BB (Block-Baked) Corkboard as their own low-temperature insulation. Engineering staffs and erection crews are prepared to handle the entire insulation job, and to work in close cooperation with owners, architects and refrigeration contractors.

This nationwide service, which includes a thorough check on the actual performance of the installation, assures customers of the most effective use of the inherent advantages of corkboard insulation.

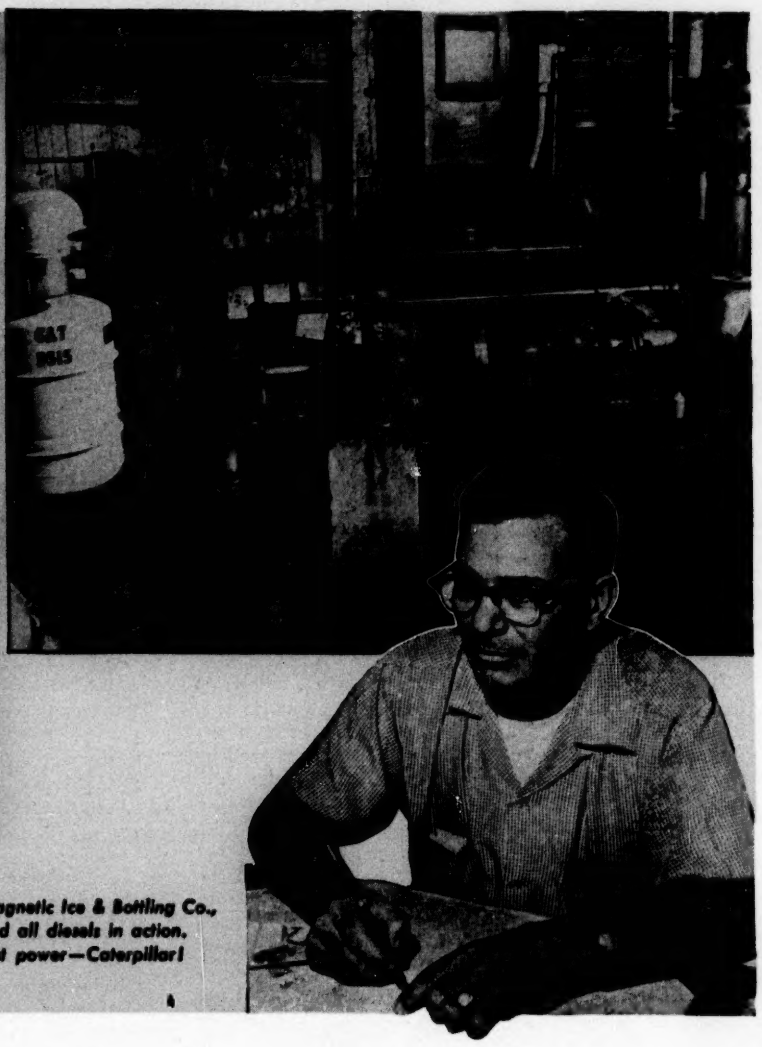
The type of corkboard produced by United Cork Companies is also of major importance in the effectiveness of insulation jobs. Carefully selected grades of cork are formed into corkboard by United Cork's patented process of block-baking (BB).

Thus United Cork Companies offers a completely integrated responsibility covering every step of the insulation job—from selection of raw materials, through manufacturing, engineering design, and erection of the insulation, to checking of performance.

For more information about the scope of United Cork Companies' service—and about the effectiveness of installations in the toughest service—just drop a line to United Cork Companies, Dept. I-6, Kearney, New Jersey.

UNI-26 This advertising is appearing in National Provisioner, Meat, Milk Plant Monthly, Southern Dairy Products Journal, Ice Cream Review, Ice & Refrigeration, Refrigerating Engineering, Commercial Refrigeration & Air Conditioning and Quick Frozen Foods during 1953.

LOW-COST ICE from LOW-COST POWER



C. L. Smith, manager of the Magnetic Ice & Bottling Co., Lebanon, Missouri, has observed all diesels in action. His choice for reliable, low-cost power—Caterpillar!

Magnetic Ice & Bottling Co., Lebanon, Missouri, uses a Cat* D315 Engine to power its 7½ x 7½, 30-ton compressor, which has the capacity of producing 21 tons of ice in a 24-hour day and refrigerating a 12′ x 16′ cold storage room. The engine works 16 hours a day, every day, four months a year. Manager C. L. Smith says: "We installed it because electric operation would cost about $600 a month. Also, in my former job as bulk agent for an oil company, I had the opportunity to observe all diesels in action. In my opinion, Cat is the most reliable."

On-the-job records, in plant after plant, back that opinion with facts. They show that Caterpillar Diesel Engines work at *minimum* cost with *minimum* maintenance — *for years*. Take fuel costs, for instance. You can save substantial sums using this thrifty diesel. It operates on low-cost No. 2 furnace oil without fouling to give you three-way savings — less fuel, cheaper fuel and rock-bottom maintenance. It doesn't require the attention of a skilled worker — another saving. And it's ruggedly built to deliver trouble-free performance day after day. If you should need service, you can count on it *fast* from your nearby Caterpillar Dealer.

Get the complete facts on these money-saving units from him. He'll be glad to refer you to other plants using them, so you can check on their performance firsthand. Engines and electric sets are available in 12 sizes up to 500 HP and 315 KW. There's Caterpillar power *just right* for your plant!

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Both Cat and Caterpillar are registered trademarks—®

USE CAT POWER FOR MONEY-MAKING PRODUCTION

In the Spotlight

A PRE-COOLING plant, designed especially for fresh sweet corn has been constructed at Miami, Fla. The new plant handles 1,000 crates of corn per hour and it is expected to lend a boost to sweet corn production in that area. For description and pictures of the new plant see page 13.

A NEW DAIRY plant is now in operation in San Francisco by the Spreckles-Russell Dairy Company, the oldest west coast independent dairy. The new plant is a two-stage industrial refrigeration plant employing rotary and reciprocating compressors, hot gas defrosting and latest automatic plant controls. Complete description, with pictures, is included in the article starting on page 15.

AFTER YEARS of experimentation and practical trials in service, the growing acceptance of mechanical refrigerator cars points to the fact that they are here to stay, bringing a revolutionary change in transportation of perishables. The development and performance of these cars are fully described and illustrated in the article starting on page 18.

THE ANNUAL convention of the National Association of Ice Industries held at Cincinnati, Ohio, November 9-12, based its program almost exclusively on marketing. Carrying out this purpose a number of successful ice men spoke briefly on some phase of the ice business in which they had been unusually successful. In addition there were headline speakers and the usual entertainment. Extensive report of the convention is published starting on page 23.

THE ANNUAL convention of the National Association of Practical Refrigerating Engineers held at New Orleans, November 2-4, had as its main objective the education of delegates, members and friends. A wide range of papers on mechanical operation of refrigerating plants, two discussion panels, a field trip and entertainment features kept the delegates busy during all the hours of the convention. Report starts on page 30.

THE FOOD SECTION of the National Safety Council met in connection with the Annual Safety Congress in Chicago, October 18-22. The Ice, Cold Storage and Locker Division held an informal meeting at which report was made on activities last year and plans were made for the current year. See story on page 41.

A MOBILE refrigerated trailer has been designed to cool milk, in which temperatures are controlled thermostatically. A description and picture of the unit is in the article on page 44.

A MIAMI hotel, designed as a seasonal winter resort, gradually developed a year-round clientele, which made air conditioning necessary. How this was done, with a minimum of interference with the workings of the hotel, is told in the article on page 45.

A STANDARD refrigeration service met the needs of a pharmaceutical manufacturer until a new product was introduced requiring a different routine. Instead of installing special equipment for this one product the equipment on hand was utilized, with some additions. For description, see page 46.

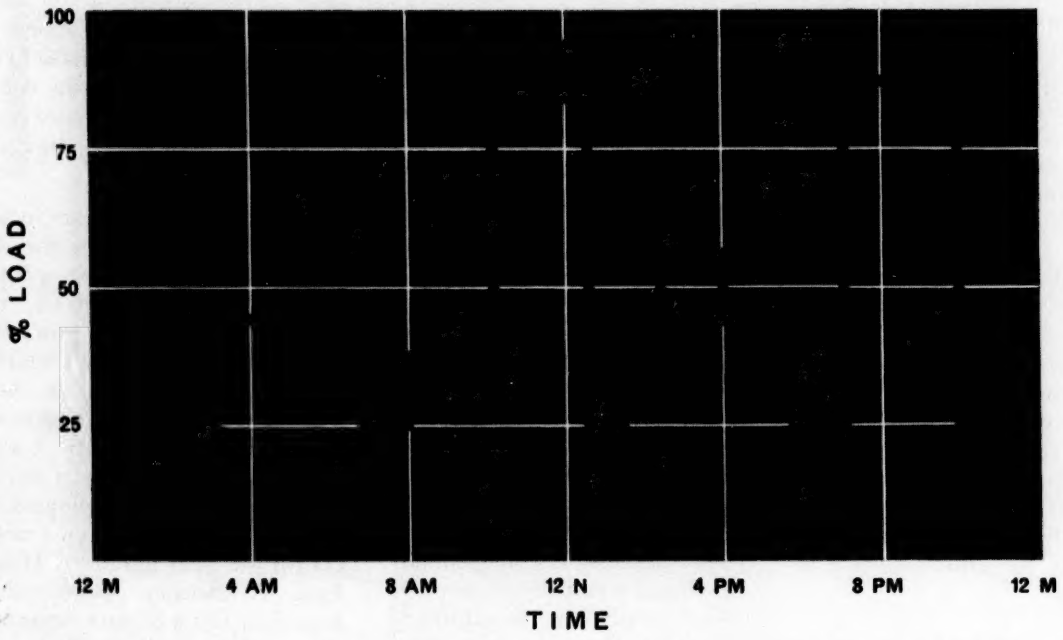
A PORTABLE air infiltration meter has been designed by the National Bureau of Standards to determine the rate of air infiltration from room to room and from outside the building. This is an improvement over previous cumbersome equipment, being lighter and adaptable to field investigations. The device is described in article on page 50.

GENERAL FOODS Birds Eye Frosted Foods Division marked its 25th anniversary recently. Birds Eye was a pioneer in 1929; today the field has 1,328 companies. Americans will consume close to four billion pounds of frozen foods this year, worth about one billion dollars, and totaling 700 different items and close to 150 million chicken and meat pies. By 1959 it is estimated that annual sales will pass five billion dollars. Per capita consumption (now at 15 pounds per year) will reach 30 pounds, it is predicted.

SOMEDAY in the years, possibly even in the months ahead, science is going to perfect a frozen whole milk concentrate, or perhaps a whole milk powder. You know of the progress which has already been made in this field in our own laboratories, and in those of industry. I am convinced, as I know you must be that when this development comes, it will bring with it a new era for the dairy industry." Hon. Ezra T. Benson, before the American Dairy Science Associations at State College, Pa.

NUCLEAR FUEL will be used in the not too distant future to generate electric power for operating refrigerated warehouses and hundreds of other home and industrial uses, has been predicted by Charles E. Weaver, Manager of Westinghouse Atomic Power Division. Already The Duquesne Light Company is scheduled to begin operating the first full-scale industrial atomic power plant.

NOW! CARRIER RECIPROCATING COMPRESSORS HANDLE REFRIGERATION LOADS FROM 5 TO 200 TONS...AUTOMATICALLY!



How does your refrigeration-load pattern look? Whether it is like this typical 24-hour chart, or whether its variations are greater or smaller, there's a Carrier reciprocating compressor to handle the load *automatically!* Carrier's famous Automatic Capacity Control is now available on all reciprocating compressors from 5 tons to 200 tons.

What does this mean to you? (1) You get steady coil temperature despite varying loads. (2) You save power on pull-down loads. (3) You get an efficient adjustment to seasonal variations. (4) You get reduced surging in multiple evaporators. And (5) you can use normal torque motors.

Want to know more about Carrier Reciprocating Compressors with automatic capacity control? We'll be glad to send you a free new booklet just off the press. Please call the Carrier office listed in the Yellow Pages. Or write to Carrier Corporation, Syracuse, N. Y.

Carrier **ammonia refrigerating systems**

New Dawal Farms pre-cooling and packing plant south of Miami, Florida. Just completed, the pre-cooling plant can handle a capacity of 1,000 crates of corn per hour. (Caterpillar Tractor Co. photo)

New Precooler Processes Florida Sweet Corn

ONE OF the most modern and efficient fresh vegetable pre-cooling plants in the state of Florida has been completed at the large Dawal Farms, just south of Miami. Built to handle 1,000 crates of corn per hour, the new pre-cooler is the only one in the area. At present, there are not enough crops grown in Dade County to keep the new facilities operating on full schedule. But as amiable Barney Waldin, president and general manager of the pre-cooler, explains, "Down in this country, the pre-cooler had to come before the crops would be grown." Corn has been grown on a small scale in the area for two or three years. It had previously been cooled using makeshift methods employing ice. These makeshift methods, however, didn't do a thorough job and proved extremely costly.

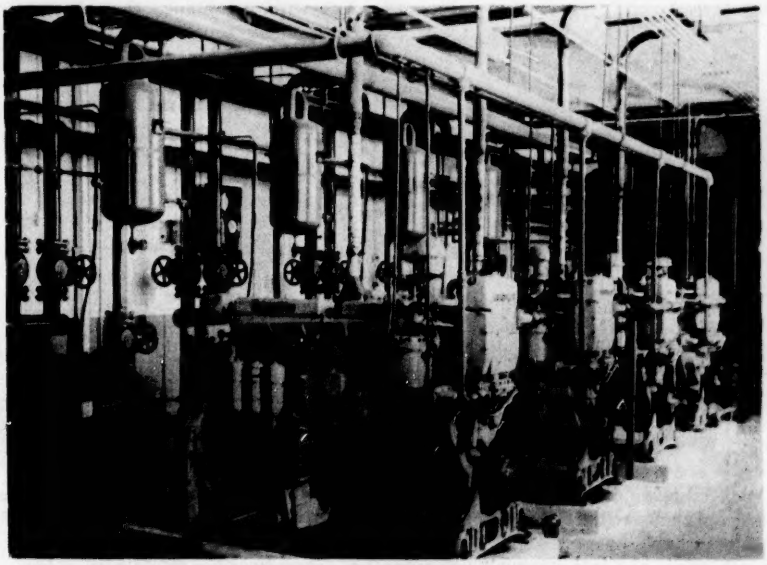
The plant was designed by Lakeland Engineering Associates of Lakeland, Fla., and built by B. A. Roemer of Belle Glade, Fla. The next closest corn pre-cooling plant is over 100 miles away. Pre-cooling corn to 40 degrees within two or so hours after it is pulled increases the market price as much as 30 percent.

And farmers in this sub-tropical country farm strictly to meet the lucrative off-season market. The marl land on which corn is grown here must be fertilized heavily as the nutritional value of the soil is negligible; the corn must be sprayed constantly to control ear worm; there is either a deluge of rain to contend with, or irrigation must be employed — but along in December and January, when "old Sol" begins to bring to harvest the tender, golden ears of sweet corn, the price that corn lovers, shivering in northern cities, will pay for fresh corn on the cob, means the difference between lush profit or disappointing loss to these hard working people.

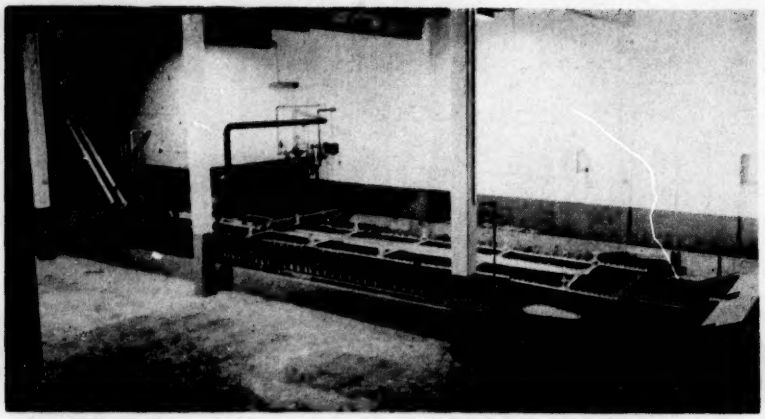
Corn comes in from the field already packed in five dozen ear crates at a temperature of from 70 to 85 F. With the new facilities, a 30 minute bath through the pre-cooling tank brings the temperature down to 40 degrees. Here in Dade County, corn must be cooled within a maximum of five hours after it is pulled as the sugar converts into starch very rapidly and the flavor is lost.

Ice Manufacture

The new pre-cooling plant can also manufacture 60 tons of ice per day. In shipping corn in carload lots, 13 tons of ice per car is used; five tons in bunkers and eight tons over the crates. The new plant also boasts ice storage bins with a capacity of 250 tons. There are also conveyors to handle the ice from storage to waiting railcars.



These four Caterpillar Engines power four 50-ton ammonia compressor units used to cool the precooling tank and manufacture ice in the new Dawal Farms Plant.



Pre-cooling tank at new Dawal Farms. Tank is 70 feet long and 20 feet wide and can cool 1,000 crates of corn from 85 to 41 F in one hour. (Caterpillar Tractor Co. photo)

Precooling Plant

The pre-cooling plant contains four 50-ton ammonia compressors powered with four Caterpillar D13000 Diesel Engines. There is also one electrically powered 25-ton ammonia compressor. Two of the 50-ton units are used to cool the pre-cooling tank; and the remaining two are used to operate two Vilters 30-ton Pac-Icers. The D13000s are directly connected with flexible couplings to each of the VMC eight cylinder compressors.

A Cat D397 315 KW generator is used as standby power for all electrical installations in the pre-cooler, conveyors, fans, lights, as well as the needs for a tomato and lime packing house and offices which are connected to the pre-cooling plant.

In this area, the corn is hand picked into truck beds. It is then taken to portable grading bins where it is graded and packed right in the field. Trucks bring in 400 crates a trip from the fields. The crates are brought in on pallets (wooden, box-like racks that make for easy handling), each pallet holding 40 crates. Small fork trucks unload the pallets on the dock and quickly transport them to a power conveyor. The conveyor carries the crates into the tank room where they are placed at the head of the cooling tank on two parallel conveyors, six crates wide. As the crates pass through the tank, they are about 90 percent submerged in the icy water. Water from the tank is picked up and continuously sprayed over the top of the crates to cool that portion that had not been submerged.

Water in the tank is constantly circulated around 7000 feet of submerged ammonia coils, two inches in diameter. The crates are submerged 30 minutes in the big 70 x 20 tank. The crates come out of the tank to be placed on power conveyors which run to either waiting trucks, boxcars, or pallets for short term storage in the cold storage room. The storage room is kept at 45 F and can store 10,000 crates on pallets. The entire building encompasses 13,200 square feet.

The exterior walls of all cold storage areas are insulated with six inch thick Foam Concrete. The Foam Concrete is made by mixing concrete, water and a chemical, with a large shaft on which propellers are mounted. The moving propellers form air bubbles and give the concrete outstanding insulating properties.

Other Vegetables Precooled

The plant is set up for corn production at the present time. However, there is a tendency to start pre-cooling broccoli, cauliflower, lettuce, celery and pole beans, crops which grow well in Dade County. Also several thousand crates of cantaloupes were processed through this plant just after the corn season ended last year. The cantaloupe was run through on an experimental basis and it was found that this worked out very well. At present, there are 1800 acres of corn under cultivation in the area, consisting of Calumet and Golden Security. It is estimated that the new plant will process 90 percent of all that's grown in the area.

Arizona Sweet Corn Promising New Crop

THE STATE of Arizona is moving into increasing production of sweet corn, following successful use of the vacuum cooling process for shipment to eastern markets. Fifteen carloads of Arizona corn shipped in June and early July after being cooled in Glendale in the Crystal Ice Company vacuum precooling plant, met with acceptance that was more than encouraging in Detroit, Cleveland, Tulsa, Chicago, and other far-off market centers. It "tasted like fresh" and sold at medium prices.

The corn came from fields northwest of Phoenix that totaled about 325 acres. The deal was so profitable that from 500 to 600 acres will be planted for fall harvest. All indications are that there will be two crops per year hereafter; from June 1 to June 15 or a little later, and from October 15 to first frost, which averages Dec. 3 at Yuma.

Field Packing

The corn is field packed in standard wire-bound crates, five dozen ears to the container. From 540 to 600 crates are shipped in a standard refrigerator car, with up to 10,000 pounds of snow ice blown over the top, and the bunkers filled.

Corn is regarded in the produce trade as the most perishable commodity of all. This is true even though it may look all right after weeks in ordinary refrigeration and days on the grocer's shelf with no refrigeration to speak of. If the temperature can be reduced to 40 F or less and held there, the enzyme action that converts sugar into starch is halted. It is on this basis that corn is now prepared for shipment to market. Growers are urged to get their crates to the cooling plant within four hours after picking, sooner if possible.

Some of the producers co-operated in field tests to see how much difference water bathing would make. The corn was plunged into ice water, into ordinary tap water, or not bathed at all. There was no difference in cooling time or final results, it was reported. Only advantage was that the water removed any flecks of the DDT dust that is applied for earworm control.

North American Adds Refrigerator Cars

THE NORTH American Car Corporation has added 275 new all-steel refrigerator cars to its fleet. The cars, equipped with meat racks and beef rails, will be leased to Geo. A. Hormel & Company, Austin, Minn. and John Morrell & Company, Ottumwa, Iowa. Each car has a capacity of 40 tons.

West Coast Independent Dairy Modernizes and Expands

Fig. 1 — Milk Processing and Packaging Room at Mission Street side of Spreckles-Russell plant, San Francisco. Four American Can fillers and three raw milk storage tanks are the predominent equipment seen.

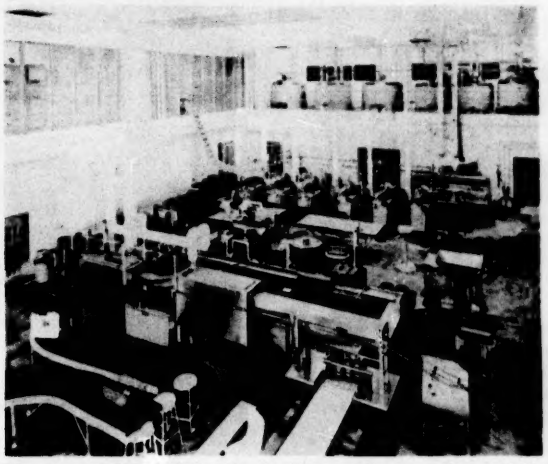


Fig. 2 — Elevated in the background are, left to right, three new 600 gallon Cherry-Burrell Model DP Round Processors for ice cream mix, and 2 — 500 and one 600 similar units from the old plant.

FOLLOWING the turn of the century, Spreckles-Russell Dairy Co. in California started in business with a single butter churn. Forty-five years later, having achieved the unofficial title of oldest independent dairy, this West Coast firm has constructed and occupied new plant facilities in San Francisco which dairy experts cite as "presently the world's finest". Contributing its share toward that latest achievement is a two-stage industrial refrigeration plant employing rotary and reciprocating compressors, hot gas defrosting and latest automatic plant controls.

Photographs, suggestions and specific data for this account were furnished by C. K. Katon, Manager, and Joe Imsand, Chief Engineer, Spreckles-Russell Dairy Co.; R. B. Holland, R. B. Holland Co.; H. E. Boudreau, Cyclops Iron Works, all of San Francisco; and W. S. Stinson, Cherry-Burrell Co., Chicago. San Francisco Chapter, NAPRE, held its Ladies Nite, together with a plant tour at Spreckles-Russell on September 8, 1954.

The new plant houses the milk processing and bottling (packaging) facilities, ice cream manufacturing department, general offices, and a large social center. The building is concrete and steel, typical San Francisco earthquake construction, with stucco and ceramic finish exterior. Glass block and plate glass is used for natural illumination on the second floor. Window walls on the first floor permit street spectator observation of manufacturing operations. Interiors

Fig. 3 — The same room as fig. 2, from the entrance: Shown are three Model V8F Vogt Continuous Freezers, each with a 50-gallon Univat Mix Flavor Tank. In the rear are three model V1F Vogt Freezers, each with 100-gallon flavor tank.

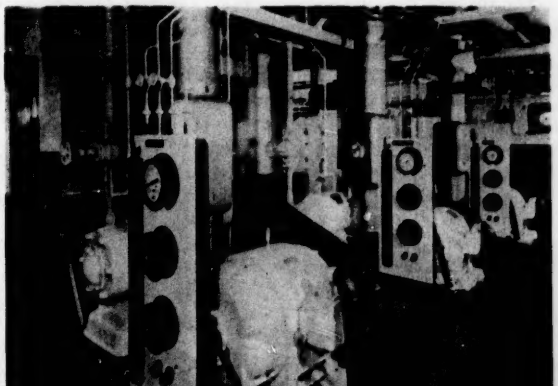


Fig. 4 — View of rotary compressors, motors, and gauge boards. Units operate from left to right on brine tank, hardening rooms, and batch freezers, respectively, but may be interchanged or run on common suction in emergencies.

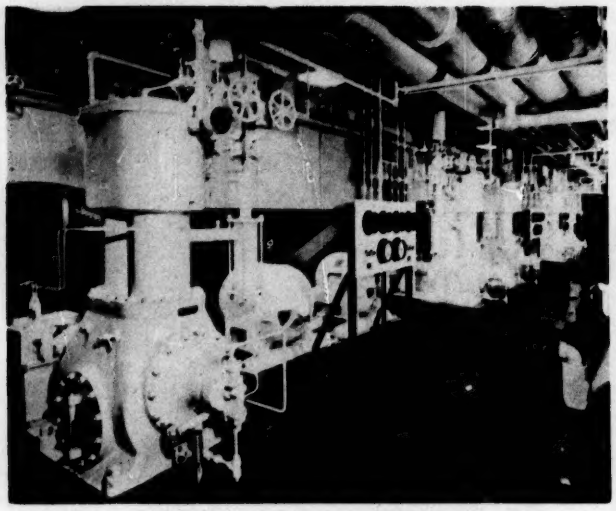


Fig. 5 — Cyclops vertical single acting compressors operated on second stage of refrigeration system in new San Francisco plant of Spreckles-Russell Dairy Co.

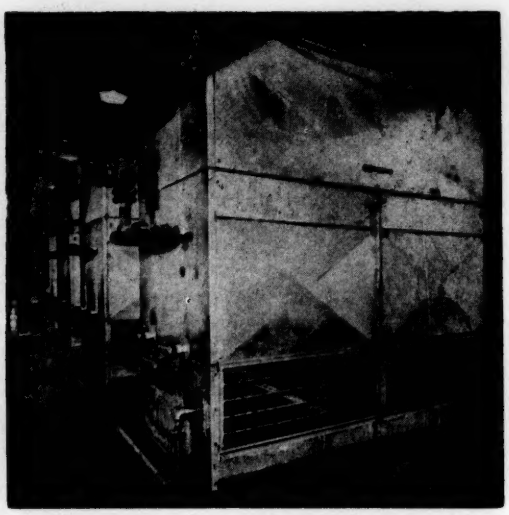


Fig. 6 — Acme evaporative condensers and induced draft cooling tower battery. Receiver is at left. Photo taken near completion.

are tile, even to ceilings in manufacturing areas. Offices and non-manufacturing spaces are acoustically treated. Plant is automatically ventilated and heated, but not air-conditioned.

Processing Equipment

Milk processing and bottling room pictured in Fig. 1, is equipped with American Can Co. packagers, and 18,000 lb. per hour pastuerizer by Creamery Package Manufacturing Co., a DeLaval clarifier and homogenizers. The four packagers will turn out 400 units per minute. Milk cooling is by 20,000 lbs. per hour high temperature seamless tube shell and tube cooler.

According to the plant management, manufacturing of bulk ice cream, package units, ice cream pies and specialties can be accomplished simultaneously. The highly diversified equipment and well engineered arrangements are pictured in Figs. 2 and 3. Equipment includes three new 600 gallon ice cream mix and two 500 gallon mix storage tanks. The latter two were transferred from the old plant.

Freezing Equipment

Freezing equipment consists of six Vogt continuous units, three with 50 gallon flavor tanks rated at 80 gallons per hour, and three with 100 gallon tanks, rated at 105 gallons per hour. Other equipment includes Vitafreeze brine novelty tank, Anderson filler and stick machines, and Lathrop-Pauson conveyors, and usual accessories.

Refrigerating Plant

Spotless as the ultra-sanitary processing rooms, is a good description of the refrigeration plant. Gleaming white equipment is contrasted with "boot-topping" colored bases, floor and wainscot-high paint on the walls. Space, however, was judiciously assigned each unit, utilizing arrangements which minimized floor area. Some provision is made for additional compressing units, and a work bench for small repairs is equipped with lathe, drill press, grinder and bench tools. The watch engineer is provided with a sound proof booth (see cover picture).

Two stage compression involves nine compressors; three rotary boosters and six reciprocating units. First stage booster compressors are A-70 Fuller rotary boosters with normal speed of 870 rpm, V-belt driven by a 40 hp, 1800 rpm, 220 v, 3-phase 60 cycle motor. The three compressors are hooked up so that one works on the hardening rooms, one on the ice cream freezers and one on the novelty freezing tank. However, they are cross connected with automatic valves

TABLE 1—REFRIGERATION LOAD ANALYSIS, SPRECKLES-RUSSELL DAIRY.

Units	Description	Size or Rating	Operating Pressures or Temperature	Tons
3	Vogt Freezers	85 gph @ 3.3 tons	Minus 28 F	9.9
3	Vogt Freezers	105 gph @ 5.23 tons	Minus 28 F	15.69
1	Hardening Room	50 x 70 x 9 ft. high	5.4 in./minus 35F Suction	24.
1	Ice Cream Storage	26 x 28 x 9 ft. high	5.4 in./minus 35F Suction	2.
1	Milk Freeze Room*	14 x 28 x 9 ft. high	5.4 in./minus 35F Suction	10.
1	Novelty Tank	84 moulds	11.7 in./minus 45F Suction	23.2
1	Milk Cooler	20,000 lbs./hr @ 104 tons with 360 gpm chilled water	35 psig/21.4 F	61.05
1	Ice Cream Mix Cooler	700 gph 1st stage: 7½ hp 17,750 cfm induced draft tower 2nd stage	35 psig/21.4 F	26.
1	Milk Storage	21 x 60 x 9 ft. high		8.
1	Ice Storage	7 x 22 x 9 ft. high		0.70
1	Ice Cream Tempering	7 x 22 x 9 ft. high		1.18
6	Mix Storage Tanks	3400 gal. total	34 F	5.
3	Raw Milk Tanks	1300 gal. each	40 F	5.02

*Requires 10 tons @ freezing; 2.55 tons when holding. Surplus milk frozen in cartons is used extensively by steamship lines as it freezes well and has a fairly long life, with the thawed product approaching the flavor of fresh milk.

Fig. 7 — Ice Cream hardening room interior. Four of 8 Kramer-Trenton Thermobank units in this room are shown. Capacity of the equipment is 8,000 gallons per day.

so that when the load on one system drops off, that compressor can cut out and the suction is diverted to one of the other operating compressors. Suction is at various negative pressures to 25 psig discharge, which is through a liquid inter-cooler to the second stage.

Second stage compression is accomplished by four- 8 × 8 inch and two- 6½ × 6½ inch reciprocating compressors. All are V-belt driven, vertical, single-acting, twin cylinder machines manufactured by Cyclops Iron Works, San Francisco. All 8 × 8's are 300 rpm, but two are equipped with 60 hp motors while the other two are 50 hp. The 6½ × 6½ units are 325 rpm with 30 hp motors. All motors are G.E. 220 v, 3 ph, 60 cyc. induction type.

Normal operation at this stage is 25 lbs. suction and 135 lbs. head pressure, with common suction and discharge lines. Discharge is through a finned desuperheater coil, fabricated by Cyclops for gravity air flow, rated approximately 60 tons (heat of compression) with 90 F ambient air; then to an oil separator and to three Acme evaporative condensers. Back pressure controls regulate varying loads from rooms and brine tank. The system is equipped with an Armstrong purger. Refrigerant is ammonia. Load requirements of the refrigerating system are detailed in Table 1.

Cooling Water System

The three Acme Model AP-95 evaporative condensers and ammonia receiver are pictured in Fig. 6. It would appear that there are four evaporative condensers. Actually there are three Acme Model AP-95 evaporative ammonia condensers and one Acme TC-1500A induced draft cooling tower which is of similar construction to the evaporative condensers but with open sprays instead of the ammonia condensing coil. This tower is used in connection with first stage of ice cream mix cooling. Boosters are cooled by oil which in turn is cooled by water, through a central distributing system with temperature safety controls. Jacket water for reciprocating units is also connected into the system.

Ice Cream Hardening

Largest of the cork insulated cold rooms is the ice cream hardening space, which is 50 by 70 by 9 ft high. Four Kramer-Trenton Model TA-520 ammonia thermobank coils are installed along each 50 ft. wall. (see Fig. 7). Based upon quite an experience factor, the engineer said that one unit will match up with a hardening capacity of 750 - 1000 gallons per day. This room which has eight coils and being in favorable climatic conditions, will actually harden at the rate of 8000 gallons per day. If installed in warm weather country, they would handle only about 6000 gallons hardening capacity per day.

Similar thermobank units are installed in the ice cream storage and milk freezing rooms, each having two units. All operate on design conditions of 5.4 in vacuum (minus 35 F). One separator re-evaporator is utilized in this plant and hot gas for defrosting is admitted to coils individually by time clock arrangements. (The re-evaporator may be seen at the ceiling, above the engineer's booth in the cover picture).

According to vendor, contractor, and owner, this system was selected for defrosting, in order to conserve water, avoid larger sewer lines and freezing of drain lines, which were large enough problems in this industry in other processing and manufacturing operations, let alone refrigeration. Liquid to coils in all hardening rooms is pre-cooled.

Other cold rooms were milk storage, ice storage, and ice cream department miscellaneous cold storage and tempering. These were equipped with Recold units. Hardening rooms have eight inches of corkboard throughout, whereas all other rooms use four inch. Walls are all Portland cement plaster finish and ceilings of mastic. Jamison cooler doors are used in high-temperature locations, and super-freezer overlap types on all sub-zero applications.

It was learned that during the first year of operation that, although the plant is handling considerably greater volume of both milk and ice cream than the old plant, with the two-stage system now installed, the first annual power costs were actually less.

Seek Marketing-Data on Uses of Fruit in Ice Cream

A SURVEY of fruit uses by ice cream manufacturers is being made by the U. S. Department of Agriculture to assist the industry in obtaining fruit products adapted to their needs. The survey will provide data on the volumes of fresh, frozen and canned fruits and berries used in ice cream manufacturing. It also will seek to obtain the ice cream industry's estimate of its potential uses of frozen fruits and berries, and to learn how these products may be improved to best meet ice cream industry requirements. Questionnaires have been mailed by the Agricultural Marketing Service to more than 1400 major ice cream manufacturers throughout the United States.

Poultry Institute Booklet

AN ATTRACTIVELY printed booklet has been issued by The Institute of American Poultry Industries, citing the work and accomplishments of the Institute. It covers a wide range, including processing, packaging, sanitation, merchandising research, legislation and other activities. In 1954 Institute Memberships stood at 478 firms, representing more than 1,700 plants and branches in the United States, Canada, Hawaii, Australia and Italy. Although a number of members resigned because of mergers with other companies, or because they went out of business, new members added during that time more than make up for the decrease.

Mechanical Refrigerator Cars Continue To Roll Off Production Lines

With nearly 1,000 mechanical refrigerator cars now in service, and more in process of production, it's a safe prediction that they are here to stay. Starting with design for low temperature commodities only, later models are all-purpose cars with temperatures ranging from zero to 70 F. This article brings the situation up to date for three of the country's big refrigerator car operators.

FROM custom-built to assembly-line production—mechanical refrigerator car progress! Less than five years ago the construction of a refrigerator car equipped with a mechanical refrigeration system required all the precise care and attention of custom tailoring. Today, Fruit Growers Express Company is turning out of its Alexandria, Va., shops four mechanical refrigerator cars per day—all equipped and ready to join the country's steadily increasing fleet of these ultra-modern freight cars fighting to win a share of the Nation's perishable foods traffic.

Fruit Growers Express pioneered the development of the present-day mechanical refrigerator car, and the first shipment in such a car was made on February 25, 1949. This company and its associates, Western Fruit Express Co. and Burlington Refrigerator Express Co., upon completion of the present construction program will have a total of 447 such cars in service by early August. Fruit Growers Express has another 110, and Western Fruit Express another 50, of these cars authorized for construction early in 1955.

The performance of the mechanical refrigerator car fleet has been welcomed by the shippers, and additional new cars are needed to meet the traffic demand. To July 28, 1954, Fruit Growers Express, Western Fruit Express, and Burlington Refrigerator Express mechanical cars had handled 11,192 loads and had traveled more than 19,400,000 miles under load.

With some 127,000 refrigerator cars in the country dependent upon ice and salt to protect their lading, the mechanical refrigerator car is still but an infant, a lusty one, though, and one which has already made its mark in transportation history.

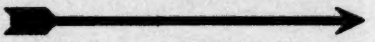
Mechanical Refrigeration Provides All-Purpose Car

With a record of having satisfactorily handled practically every commodity being marketed by the frozen foods industry, from the frozen concentrates and frozen fruits and vegetables to turtle meat, the mechanical refrigerator car is acknowledged to have met all of the transportation vehicle requirements of that industry. It is now proving its serviceability as an "all-purpose" car, capable of satisfactorily handling fresh perishable products, as well as frozen foods.

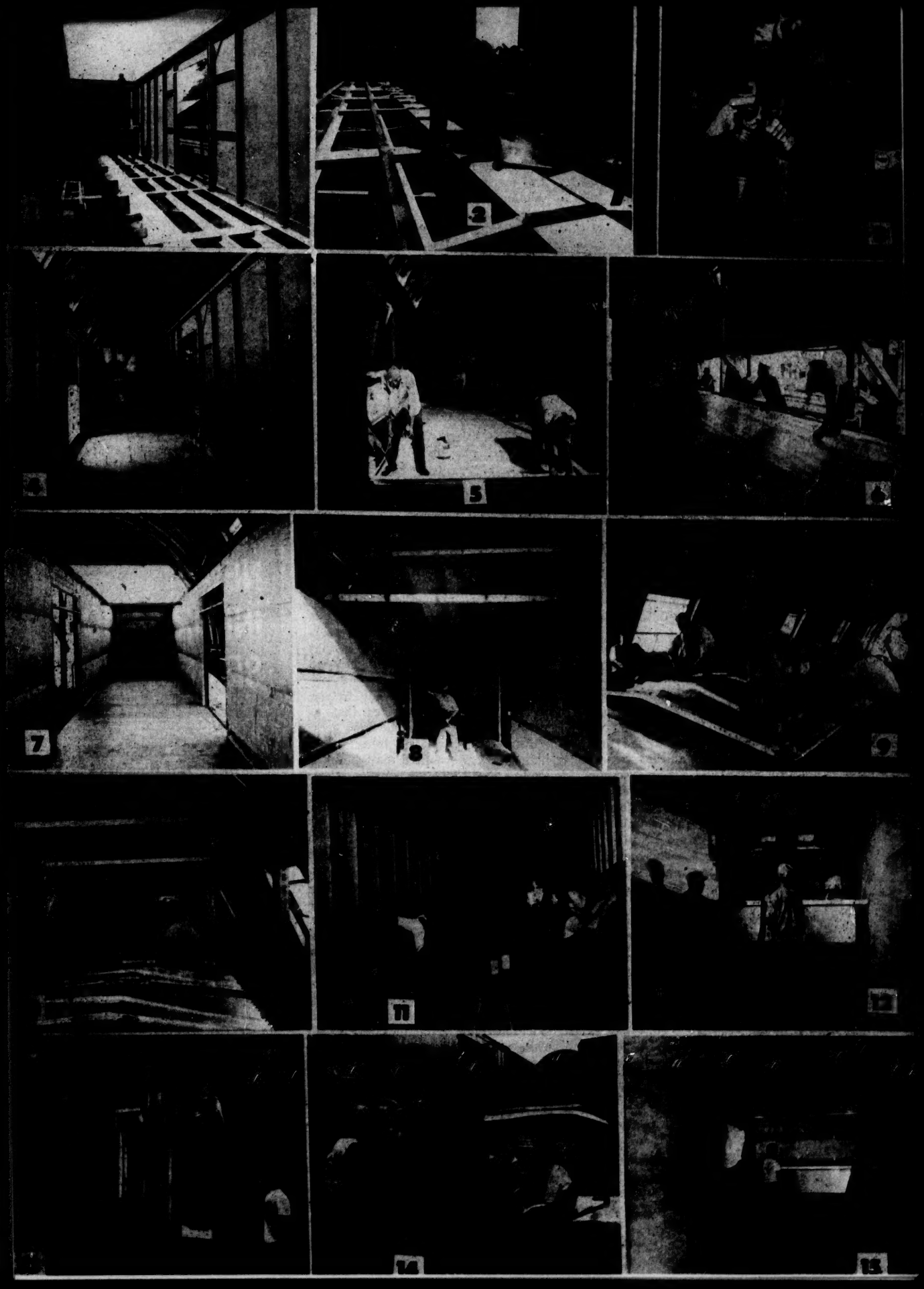
The first 150 mechanical cars built by F. G. E., W. F. E., and B. R. E. were designed for low-temperature commodities only. The balance of the fleet, however, including the cars now under construction and on order are of the "all-purpose" type, capable of producing any desired temperature from zero to 70 F. Fresh commodities already handled in the new type cars include: potatoes, oranges, grapefruit, pears, applies, peaches, cherries, tomatoes, celery, meat, and evergreens.

All of the latest type mechanical cars constructed by these Companies are super-sized and super-insulated, 10 feet longer than conventional ice refrigerated cars and with 6 to 9 inches of insulation. Each car has two independent compressor-evaporator refrigeration systems, powered by a diesel-electric power plant. Electric heating coils supply heated air when needed.

Chilled or heated air, depending upon the requirements of the load, is forced through ceiling ducts, down inside hollow walls, and back under the floor racks—an envelope for air circulation around the load but not coming into direct contact with it. While the machinery compartment is arranged for easy access for maintenance work, the car is equipped with distant reading thermometers, allowing temperature checks without entering the engine space. These cars can carry 128,000 pounds of lading and can travel from coast-to-coast without refueling. **(See page 20)**



Progressive construction of new mechanical refrigerator cars now being built to Alexandria, Va. shops of Fruit Growers Express. 1—Underframe, on trucks, with steel sides and ends applied and machinery compartment bulkhead framing assembly being positioned for welding in place. 2—Welding subfloor support blocks to top of underframe center sill. 3—Welding seams in steel sub floor plates, using automatic submerged arc welding machine. 4—Completed shell of car, with sides, ends, subfloor, and machinery compartment bulkhead framing and lining in place and with welded steel bolts applied. 5—Floor insulation in place and top flooring being applied. Interior surfaces of shell (including sub floor not shown) covered with heavy coating of waterproof cement. 6—Nailing car T&G wood ceiling assembly in jig on ground; to be turned over and set in place, in one unit, on car in background. 7—Car with side and end insulation in place. 8—Moving ceiling assembly into place. 9—Roof being assembled in place preparatory to riveting; after application of the roof insulation that is covered over by reflective paper. 10—Roof assembly rivets being cold driven by hydraulic riveting machine. 11—Plywood flue lining in place over side insulation and T&G car lining being applied to the spacer posts to form the side wall vertical air flues. Ceiling duct suspension bolts (of aluminum) are also shown in place. 12—Hoisting the elevator assembly into place in the machinery compartment bulkhead frame with special hoist designed for that purpose. 13—Setting the dual refrigerating condensing unit into place on floor of machinery compartment. 14—Placing the Diesel engine-alternator unit in position on machinery compartment floor. 15—Completing application of lining to machinery compartment bulkhead frame and installation of car top thermometers. Aluminum ceiling duct is shown in place with adjustable louvers open. (Photos by Fruit Growers Express Company)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Construction Technique

The current construction program at F.G.E.'s Alexandria, Va., Shop incorporates into the new cars all latest construction techniques and improvements. Assembly line production of refrigerator cars is not new to this shop. It has heretofore built thousands of conventional type cars in this manner. The mechanical refrigerator car made the job more complex, however. In addition to the assembly and installation of the mechanical units, the cars themselves contain many structural changes from the conventional type.

For example, instead of ice bunkers at each end of the car, the mechanical type has a single machinery compartment at one end; in addition to the ordinary lining of the lading space, the mechanical car has an added ceiling and hollow wall construction to provide the air circulation envelope; there is a metal vaporproof sub-floor; fuel tanks are suspended underneath the car floor and the car sides at the machinery compartment are louvered to provide breathing means for the diesel-electric unit; the roof, of course, does not require the conventional hatch openings and their attendant hatch plugs and covers.

Employee Training

It required an educational program of some magnitude before Fruit Growers Express's regular employees were qualified to assemble and install the mechanical units; the field forces of these companies also had to be taught the servicing and maintenance requirements; and fueling stations, stocks of repair parts, and other service facilities had to be strategically located along the travel routes of these cars.

All of this has been accomplished in the last five years, and the Alexandria Shop; men, tools, car construction facilities and equipment, is now capable of doing as good or better job on mechanical cars as it ever did on the conventional type; when the cars move over the some 70 railroads with which these companies have car supply and service contracts, they are in hands fully qualified to take care of their needs.

The "Frigidaire" mechanical refrigeration system developed by F.G.E. in cooperation with the Frigidaire Division of General Motors Corporation is being used in all the latest type cars built by F.G.E., W.F.E., and B.R.E. This system is rugged, built to withstand the stresses and strains of train operation; it has proved its dependability by service.

Here to Stay

The mechanical refrigerator car developed by F.G.E. and its associated companies was a true "trailblazer" and these companies have not let up in their efforts to progress the mechanical car to universal acceptance. A number of other car lines and railroads now own mechanical refrigerator cars and still others appear ready to enter the field. It looks like the mechanical car is here to stay and we may be upon the doorstep of as revolutionary a change in railroading as any which has gone before. Certainly, perishable foods in transit have never had better care or more attention than they are receiving today.

Freezing Crab Meat

THE soft crab industry relies on freezing as an aid in marketing, says a report by the Fish and Wildlife Service of the U.S. Dept. of the Interior. Soft crabs freeze without serious depreciation and gluts of them are now usually so handled.

It was found a few years ago that crab meat, combined with a medium such as egg, milk, crumbs and seasoning, made into cakes and frozen, appealed to the consumer. Markets were soon being supplied with packaged frozen crab cakes and similar preparations, cooked or ready to cook, and production now grows yearly. It is held back only by the scarcities and high prices that at time afflict the crab industry.

Hard crabs, on the other hand, both raw and cooked, may suffer a quality loss in frozen storage. Crab meat often toughens and discolors, even though its edibility may be unimpaired, the report says.

Frozen Green Peas

THE 1954 pack of frozen green peas amounted to 205,086,759 pounds, according to a preliminary tabulation by the National Association of Frozen Food Packers. This preliminary total is eight percent below the production of frozen green peas last year. Both Eastern and Western producing regions registered moderate pack reductions this year, while in the Midwest, the pack was about 15 percent greater than in 1953. Despite the over-all pack reduction, the volume packed in retail sizes this year was approximately equal to that of last year. Most of the retail pack was in the 10 oz. size. Both the small institutional pack and the bulk packs were appreciably smaller this year than in 1953.

THE YORK ADVERTISEMENT on the following two pages is the first appearance in this magazine of a new information series on York Refrigeration Equipment and its uses.

CUT OUT AND SAVE THIS ADVERTISEMENT and the others that follow. The full series will appear over a period of many months and will give you a comprehensive picture of York equipment *as it is used in your industry.*

SEND FOR FREE FILE FOLDER in which to keep this series—and ask for copies of future advertisements.

NEW INFORMATION SERIES!

AND DO AS SO MANY OTHERS HAVE DONE—the easiest, most expert way to solve your refrigeration problems is to call your York District Office (listed in the classified phone book in principal cities) or write to York Corporation, York, Pennsylvania.

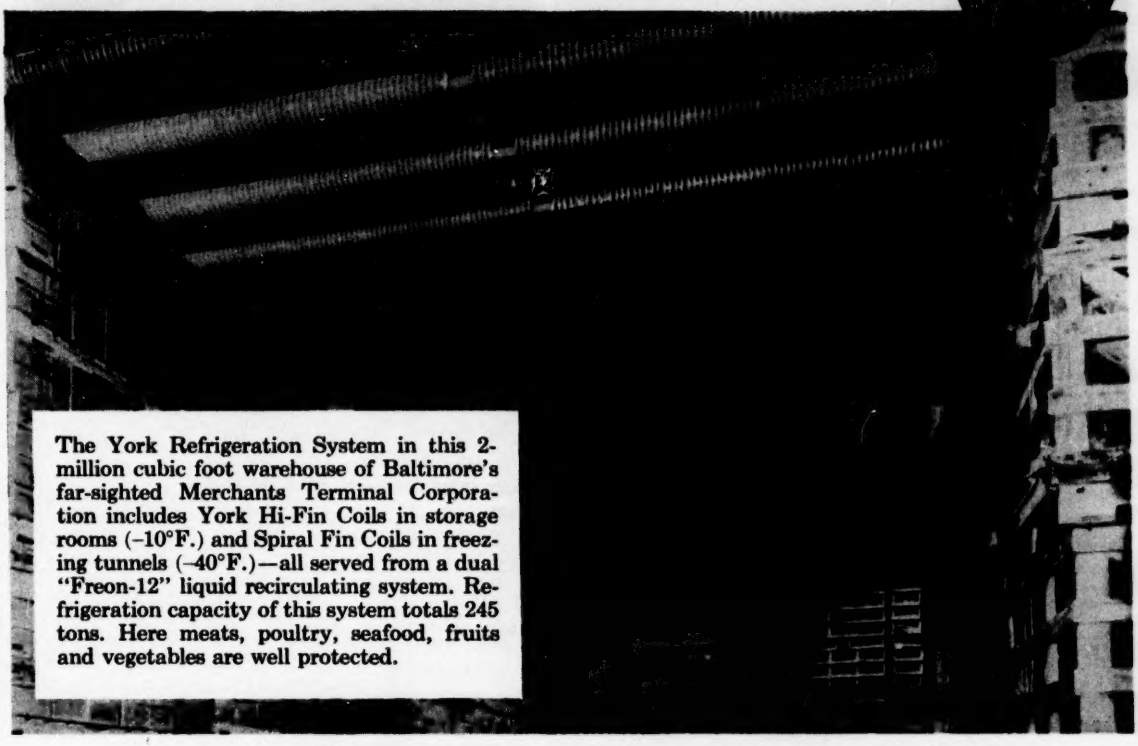
York

the quality name in refrigeration

ALONG THIS LINE AND FILE CUT ALONG THIS LINE AND FILE CUT ALONG THIS LINE AND FILE CUT ALONG THIS LINE AND FILE CUT ALONG THIS LINE AND FILE CUT ALONG THIS LINE AND FILE

NEW facts for your files on York "Hi-Fin" Coils for

Frozen Food Warehouses



The York Refrigeration System in this 2-million cubic foot warehouse of Baltimore's far-sighted Merchants Terminal Corporation includes York Hi-Fin Coils in storage rooms (–10°F.) and Spiral Fin Coils in freezing tunnels (–40°F.)—all served from a dual "Freon-12" liquid recirculating system. Refrigeration capacity of this system totals 245 tons. Here meats, poultry, seafood, fruits and vegetables are well protected.

TEMPERATURES GOING DOWN—and direct expansion refrigeration is gaining popularity. York Hi-Fin Coils are *designed* for this purpose.

LOAD GOING UP—equipment must deliver more cooling for the space it takes up. York Hi-Fin Coils have 7½ *times* greater capacity than equal lengths of 2" bare pipe coil.

LESS DEFROSTING WITH CEILING-HUNG FINNED COILS—only once or twice a year. The unique construction of York Hi-Fin Coils gives *easier* defrosting, too. Frost drops free without dripping.

NO FANS NEEDED—York Hi-Fin Coils create air movement *without fans*. This feature alone represents a considerable saving, because it eliminates the operating cost of fans *plus* the operating cost of the extra cooling capacity needed to remove the fan heat from the storage rooms.

DEFROSTING WITHOUT MOVING PRODUCT—when York Hi-Fin Coils are installed one pipe high *only over the aisles*, they provide required cooling. When defrosting your storage rooms, product *need not be moved!*

ENGINEERING SERVICE—York's vast experience in the freezing and storage of foods is part of a *complete* York service available to your design engineer.

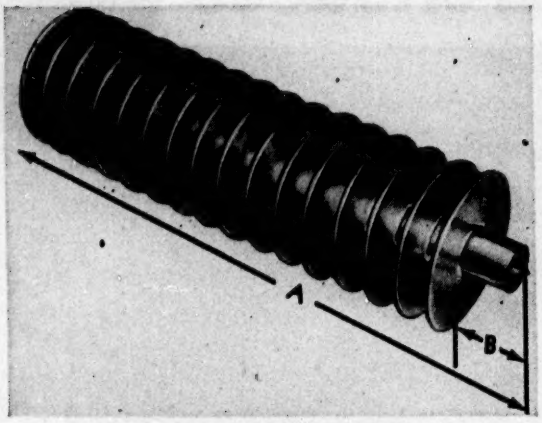
Some Helpful Hints for Warehousemen

1. Include hydraulically operated "floating platforms" in your loading docks. These can be quickly brought to the level of each truck's bed—even adjusted as the bed moves up or down during unloading and loading.

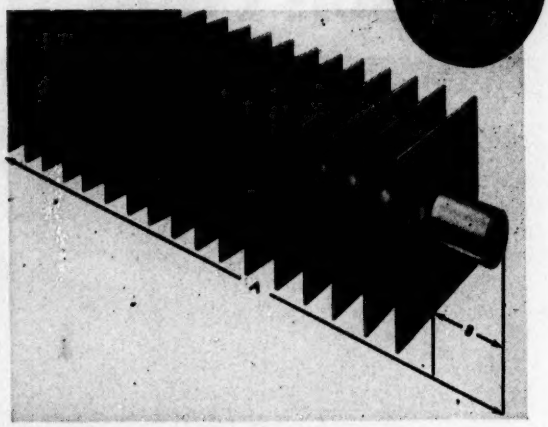
2. Another method is to build your loading platform with a slight incline. Then each truck can find a spot flush with its own bed. Number the "stalls" and each truck can find its spot readily.

3. Air conditioning and radiant heat in your vestibules cut door maintenance, speed up traffic and reduce accidents because ice, fog and frost otherwise encountered are eliminated.

YORK HI-FIN COILS



YORK HI-FIN COIL—ROUND FINS.



YORK HI-FIN COIL—SQUARE FINS.

York Hi-Fin Coils provide a number of important advantages, particularly in direct expansion refrigeration applications. The greater surface area per unit of length and the high heat transfer rate permit a highly compact and economical installation.

DIMENSIONS

COIL LENGTH ("A") both square and round fins	5'0"	6'8"	10'0"	20'0"
DIMENSION "B" read each figure with corresponding "A" figure above	3"	3½"	3"	3"

7" square Fins; 7½" Round Fins; Fin Spacing, ¾" or 1½".

PRINCIPAL FEATURES

LARGE COOLING SURFACE—7½ times greater capacity than equal length of 2" bare pipe.

HIGH HEAT TRANSFER EFFICIENCY—each tube is joined to every fin under high-pressure tension bond.

EASY MAINTENANCE—no moving parts.

INSTALLATION FLEXIBILITY—sections can be closed off to provide efficient operation with light loads.

OPERATION

Flooded or pump recirculation feeding of refrigerant is recommended. Sections can be closed off to balance system when the coil is set up so that it can be operated with reduced compressor capacity. Coil banks normally require only one pipe high, providing easy hot-gas defrosting, using discharge gas from the compressor.

SPECIFICATIONS—STANDARD UNIT

TUBES—2" OD, 13 gauge, electric welded, black steel.

FINS—7½" OD round or 7" square, 12 gauge, black steel discs spaced on ¾" or 1½" centers.

FINISH—Coils are furnished either hot-dip galvanized or Ferrocote. Galvanized coils are recommended for applications above 32° F.

VALVES AND FITTINGS—York Valves and Fittings are known for *positive seal* and are made in over 6000 sizes and types from ¼" to 14". They are available for all Hi-Fin installations.

YORK CORPORATION

the quality name in air conditioning and refrigeration

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

CUT ALONG THIS LINE AND FILE CUT ALONG THIS LINE AND FILE CUT ALONG THIS LINE AND FILE CUT ALONG THIS LINE AND FILE CUT ALONG THIS LINE AND FILE

Better Marketing of Ice Basic Theme of Annual Ice Convention

THE program of the 37th annual convention of the National Association of Ice Industries held at Cincinnati, Ohio November 9-12 was based almost entirely upon the subject of marketing. Pointing up this general theme were two and a half sessions in which operating ice men told how their companies had been successful in conducting phases of their business having to do with the marketing end.

These subjects were covered: Selling ice through retail stores, hydrocooling peaches, truck icing, ice carvings and punch bowls, costs of processing ice, channel icing, selling ice to canners, selling ice cubes, meat on ice, keeping ice in the public eye, serving rural areas, ice distribution.

The main social event of the convention was the President's Annual dinner dance held in the Netherland Plaza Hotel, with an entertaining floor show followed by dancing.

For the ladies a tour of Cincinnati was provided, Wednesday afternoon which included stops at the Rookwood Pottery, the Irwin M. Krohn Conservatory and the Cincinnati Art Museum.

A number of concerns as usual presented exhibits of supplies and equipment used by the industry. Attendance and interest shown in this phase of the convention was reported as entirely satisfactory, more real interest being shown in new equipment than ever before.

Report of Board of Directors

The annual report of the Board of Directors was summarized at the final session Friday morning by President Paul Andres.

Officers for last year were re-elected as follows: President, Paul Andres, Oklahoma City, Okla.; First vice-president, E. L. Gunn, Atlanta, Ga.; second vice-president, Richard C. Muckerman, St. Louis, Mo.; treasurer, George Steers, Kalamazoo Mich.; executive secretary, Guy W. Jacobs, Washington, D.C.

The dues will remain the same as last year: For plants producing 2500 tons or less annually, a minimum of $25.00 per year; from 2500 to 100,000 tons annually, one cent per ton, Associate memberships $50.00 per year.

For 1955 the budget will remain the same. Although there will be an indicated deficit, it is expected that sufficient new members will join the association to absorb this deficit, and enable the association to live within its income.

The Executive Committee was appointed as follows: Paul H. Andres, Oklahoma City; E. L. Gunn, Atlanta, Ga.; Richard C. Muckerman, St. Louis, Mo.; George Steers, Kalamazoo, Mich.; Paul Ashley, Fresno, Calif.; William J. Ayers, Memphis, Tenn.; A. R. Carlson, Chicago, Ill.; P. A. Buehrman, New York, N. Y., W. B. Blessman, Akron, Ohio; A. J. Gordon, Atlanta, Ga.; L. L. Swartz, Indianapolis, Ind.; J. C. Thompson, Dallas, Tex.

Opening Session

The opening session of the Convention was called to order by President Paul H. Andres. In his opening remarks Mr. Andres stressed the fact that the convention program was pointed toward ways and means of making 1955 a better year for the ice industry. To this end he said, newer and more successful plans of marketing are needed to regain the ground that has been lost. Our only need is to find the right merchandising methods, he said, and all know that making ice easily available to customers is important, and that is being done. They also need to make known to customers what ice will do for them. He asked them all to cooperate in the plans made to bring better business. It will take courage in the present situation, but the rewards will be commensurate with the efforts made, he said.

The Association Provides

The usual interesting presentation of the help and service provided by the National Association to its members was given by Guy W. Jacobs, executive secretary. Mr. Jacobs said that every member should be interested in promoting the welfare of the industry because in doing so they improve the prospects of their own business. The association, he said, is organized by and for the members for the purpose of working for their interests and insofar as it does this, it is successful. It carries on the work they want done as shown by its long list of accomplishments. Now it has a wide range program of diversified projects many of which are on a continuing basis.

Mr. Jacobs then presented a series of slides illustrating a broad outline of work and accomplishments in which the association had taken the initiative, embodying such activities as: ice bags for crushed and cube ice, modern ice delivery trucks, iced vegetable counters, advertising material, sweet corn icing, hydrocooled peaches, meat on ice, with all these helps available, he concluded, there are still others being carried on, so that there is no reason why 1955 should not be a good year.

Paul H. Andres, President Oklahoma City, Okla.

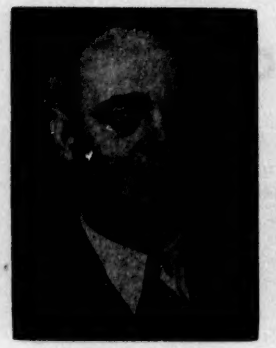
Finance Report

The financial report presented by Treasurer George Steers revealed that expenditures during the past year had exceeded income, showing a deficit. Further analysis, illustrated by slides, showed a decline in both receipts and expenditures since 1948. The present situation shows that to balance the budget it will be necessary to cut down on some of the activities of the association or increase its income. He suggested a sincere effort to comply with the second alternative. As a means to this end he suggested that the basis of levying dues be changed from a tonnage to a dollar sales basis. Which he thought would be more equitable because of the decline in tonnage and increase in net sales.

Selling Ice in 1955

The session was closed with a dynamic address by one of the conven-

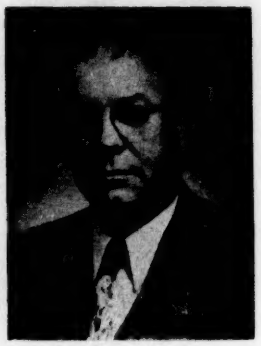
Officers National Association of Ice Industries Re-elected for 1955



E. L. Gunn, Jr., Vice-President, Atlanta, Ga.

Richard C. Muckerman, Vice-President, St. Louis, Mo.

George Steers, Treasurer, Kalamazoo, Mich.



Guy W. Jacobs Executive Secretary, Washington, D.C.

tion headliners, Dr. H. H. Maynard, Ohio State University, who spoke on the subject 'Selling Ice in 1955". Mr. Maynard drew upon his extensive knowledge of business to compliment the ice industry for its continued aggressive program in the face of declining markets. The problem is being correctly faced, he said, by finding new uses for ice, uncovering new markets, and cultivating new customers. Salesmen should be trained to talk facts to their customers and avoid talking in generalities. There is no substitute for knowledge of the product, and ice should be sold for what it will do.

How We Do It

Two sessions of the convention were given over to speakers, all active ice men, telling how they conduct some phase of their ice business. As explained by vice-president E. L. Gunn, Jr. these sessions were scheduled to show how marketing plans had been carried out successfully. The basic theory of all these plans, he said, was to provide ice when and where and in the form the customers wanted it.

G. Luther Rosebrock, Southern Ice Co., Charleston, S. C. told about his company's sales of ice through retail stores. Starting in 1947, they now have 21 such outlets, selling a 10-pound bag of ice cubes for 25 cents. Refrigerated cabinets are leased to the stores and serviced by the ice company, occupying a space four feet wide and 2½ feet deep. Adjacent to one large supermarket the company operates a vending station, and sales at this station run about the same as the store. Starting in 1947 with sales of 5000 10-pound bags of ice, this had increased in 1954 to 100,000 bags.

In the discussion a California operator said that some years ago they sold liquor stores on the idea of giving away ice cubes with purchases. The idea spread to other liquor outlets including bars and restaurants. Now, although the ice company does have good sales at wholesale prices, sales through these outlets are not possible.

W. H. Brown, Brown Ice & Coal Company, Benton Harbor, Mich., told about selling ice for hydrocooling peaches. Following demand for this service in 1947, he started in an experimental way and in 1948 installed more adequate equipment and sold a much larger volume. In the peach growing section of Michigan, he said, hydrocooled peaches are recognized as a better product, with more attractive appearance and reduced spoilage.

In the discussion, C. P. Austin of the National Association pointed out that the background for this business had been established some years ago when the Technical Department had cooperated with Prof. Cardinell of Michigan State College in a research study. The results of this study had been published and disseminated among peach growers with the result that they were fully informed on the advantages of hydrocooling. This explained, he said, why ice men in peach growing sections, now receive unsolicited calls for this business.

Paul Ashley, Central California Service Company, Fresno, Calif. talked on developing truck icing. This business he said has been active in California for several years, serving both long and short haul trucks. Truck icing stations have been established on all the main highways leading out of California, a list of such stations being suplied to the State Trucking Association. Both crushed and block ice are supplied and also dry ice which helps to cut down the meltage.

In the discussion, an Ohio distributor in an Ohio town said his company wanted to get into the business of truck icing but hesitated to make the investment necessary for standard equipment. So as a temporary expedient they rigged up an abandoned ensilage blower with a small ice crusher attached and powered by an auto truck. The cost of this installation was about $200. It proved successful and the business grew and later standard equipment was installed.

Harriet D. Gray, Polar Ice & Fuel Co. Indianapolis told how she had promoted ice carvings and punch bowls for her company. For prospective customers they send a folder describing the service with a form letter to those in charge of weddings, receptions, etc. Also they work in cooperation with the florists. A considerable amount of business comes also from supplying table decorations for banquets. Other industries make use of them to promote their products at trade shows. Students of a local art school are employed to do the carvings. Special care is taken to display these pieces attractively, with colored lights and cloths to catch the dripping. Special care also is taken in delivering with carrying bags and corrugated boxes.

L. L. Marsh of Portland, in the discussion, said that almost any ice company could develop a market for punch bowls and that making ice carvings is not as difficult as it might sound for anyone who is willing to try it.

L. L. Baker, Colorado Ice & Cold Storage Company, Denver, talked on revamping an ice business. The basis of a marketing plan for any ice busi-

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D. M. Howell, Colonial Ice Co., Greensboro, N.C.
Millard W. Young, National Ice & Cold Storage Co., San Francisco, Calif.

ness, he said, is to advertise, merchandise, make ice available such as providing cabinets for the resale of ice, selling block, sized and cube ice at points outside of the plant or delivery trucks. An adequate merchandising plan, he said, calls for analyzing the marketing situation in regard to possible outlets and then providing ice to supply those outlets.

Thomas G. Carroll, City Ice Delivery Company, Wichita, Kansas, gave a talk on cutting costs of processing ice. His company started this business in 1951, processing and packing ice in 100 pound bags. By 1953 they had enlarged the business, installed automatic equipment and were packing in paper bags exclusively, reducing costs from $3.00 to $1.12 per ton. In 1954 they installed a sewing machine for bags, still further cutting costs by reducing the operating personnel.

Opportunities

The Wednesday session was closed with an address on "Opportunities Unlimited" by Leonard Green, president of Dr. Pepper Company, Dallas, Tex. Mr. Green brought a challenging message to the ice men regarding future opportunities in American business, including the ice business. American industry he said, has its ups and downs and right now we are in a period of competitive prosperity. One obstacle to business expansion is the reluctance of people to accept new ideas, and to meet this special efforts must be designed to provide the people with what they want. In this endeavor the ice industry is on the right track. But they must go further than that. There always will be better ways of doing things and members of the industry must be constantly on the alert and on the lookout for these better ways of doing things.

More on How We Do It

The Thursday morning session was continued with presentations of "How We Do It", opened and conducted by R. C. Muckerman, second vice-president.

During this session, at 11:00 o'clock, General Wetherred, in recognition of Armistice Day, spoke briefly, eulogizing the sacrifices and accomplishments of U. S. soldiers who have fought three major wars during the past two decades.

J. W. Ford, American Service Company, Columbus, Ga., discussing channel icing, said their best allies are women shoppers who, once they become acquainted with channel iced vegetables, want their groceryman to continue using it. Their first contact with prospective channel ice customers is made by the drivers and this is followed up by company salesmen.

Ralph Jacobs, Hanover Ice & Locker Plant, Hanover, Pa., told about the developing market for use of ice by canners. The canners are beginning to realize the value of icing truck loads of vegetables from field to the canning plant. Crushed ice is blown over the top and this has been found very effective in keeping the newly harvested vegetables fresh. Large milk trucks, he said, are being utilized for this, and water from meltage of the ice is drained off at the plant.

P. J. Mastin, Peoples Ice Company, Syracuse, N. Y., told about building and retaining ice cube sales. His company, he said, has been selling ice cubes for many years. There is a steady demand and they supply it by making cubes available through grocery stores, soda fountains, liquor stores and restaurants. An essential in holding such business is to retain high quality and perfect sanitation. Their cubes are far superior in every way he said, to what their competition has to offer and they let the public know, through advertising, what we have and where they can get it.

Mrs. Katherine Kinsey, C. Hoffberger Company, Baltimore, Md., talking on keeping ice in the public eye said icemen must remember constantly the changes within the last 30 years. Many housewives for instance have never used anything but mechanical refrigeration in their kitchens. The present increased buying power has made it possible for them now to want better products at higher prices. The five-day week provides more leisure. This offers an opportunity for the ice man to sell more party ice and picnic ice. But to realize on this opportunity, better and more consistent advertising is needed. The public has been trained to prefer nationally advertising products and to capitalize on this a standardized ice advertising program is needed.

Willard T. Adcox, Dalton Ice Company, Dalton, Ga., handled the subject of meat on ice. In his town, he said, all the better meat stores are using ice. When this idea was first introduced he said they were a bit skeptical but decided to give it a try. They first obtained a manual on the subject distributed by the National Ice Association. Their first customer was a corner grocery and meat store to whom they offered to set up a case with a week's free trial. It was very

successful and soon all the better meat stores fell in line. Special care is taken in each case to prepare the display properly and provide the right temperature. After installed, a representative of the ice company checks back once a week to see that it is working properly. When a groceryman sees how well meat on ice works, it is easy to sell him on using ice also for vegetables, he said.

O. A. Reardon, Mutual Ice Company, Alexandria, Va., talked on vending ice. This method of buying ice is very popular with ice customers, he said. His company has a number of vending machines in operation under two general types of contract arranged to meet the needs of the attendants. They are located at gasoline stations and along public highways. These vendors sell 7½ pound bags of ice for 25 cents and 25 pound block ice at the same price. The crushing and bagging process at the plant has been greatly simplified and made economical with the use of modern equipment.

The Wednesday session was closed with another headline address by Arthur H. Motley, president of Parade Publications, New York, who spoke on the subject "Use it or lose it." Mr. Motley emphasized that the pattern of American business runs on an even keel and that there are really few new basic problems. To meet present difficulties, he said, it is only necessary to remember how solutions were found for previous problems. With a growing population and more money to spend the future looks good for all business, including the ice business, and ice men have only to use the knowledge they have new together with what they can obtain from their National Association to build and maintain a successful ice business.

How We Do It — Concluded

A speaker scheduled to discuss serving rural areas was not able to be present and this subject was covered by general discussion and comment from the floor. It was suggested that for small towns, as well as rural areas, an ice chest holding about a ton of ice for resale where an attendant could be present, such as a gasoline station or country store, might be good business. One company reported putting out 35 such chests in rural stores. The stores pay $10.00 a ton for the ice, and sell crushed or block ice at the regular retail price.

E. K. Wellman, City Ice & Fuel Co., Detroit, Mich., spoke on managing ice distribution. Changing labor conditions and higher costs, he said, have made it necessary to scrutinize costs carefully and in some cases to install labor saving machinery. His company had a rather extensive delivery system for rural areas and small towns around Detroit, but mounting costs had forced them to curtain this service. They combined some routes and went in for corn icing and icing of vegetables. In spite of increased labor costs, a careful cost study had enabled them to rearrange their selling program and cut delivery costs about eight percent. In one town which had never had ice service, a vending station, handling crushed and block ice, was installed and sales had been entirely satisfactory. They also have some chest installations that have been quite satisfactory. Mr. Wellman also gave some interesting cost figures on ice delivery.

In connection with vending stations, during discussion of that subject it was stated as a rule of thumb that gross sales during a year should equal the cost of the station.

Headline Speakers

Another featured speaker, Thomas A. Ballantine, president of the Louisville Taxicab & Transfer Company, gave an interesting talk on "Business Apathy Fosters Disrespect." Apathy is the greatest obstacle to business success, he said. Any individual has the right to change his thinking and fostering and developing new ideas and new ways of doing things are the best antidotes to apathy. Liberal writers have developed a habit of criticizing business and one of the reactions to this has been the growth and strengthening of trade associations. One of their main functions should be to develop a better understanding on the part of the public of the ideals and objectives of American business. Business men cannot expect government to solve their problems but must depend upon their own initiative. The big development of this Country has come, not from government, but from individual work and initiative.

The convention was brought to a fitting close with an address by Harrison Wood of the Red Ball Motor Freight, Inc., Dallas, Texas, with an address on "A Formula for World Peace Now." Mr. Ball stated that the United States Government is now on the right track in declaring its policy not to dominate other peoples but to help them throw off the yoke of oppressors so that they may live in freedom. And any acts of communist aggression against such peoples will be considered a violation of national security and world peace. He said that in Russia the communist party which has fostered a policy of aggression is on the way out and that the Red Army, which plans to hand back to the satellite countries their own government, will take over the leadership of Russia, with a newly elected dictator.

Unit Ice Association Secretaries Discuss Marketing at Annual Meeting

DEVOTED largely to marketing, the annual Fall meeting of the Unit Ice Association Secretaries was held in connection with the annual convention of the National Association of Ice Industries at the Netherland Plaza Hotel, Cincinnati, November 9-12. The secretaries met in their usual forenoon session on the opening day of the Convention, Tuesday, November 9. It was followed by a cocktail party and luncheon. Robert N. Milling of Delta States, acting chairman of the group.

The group was welcomed to Ohio by Miss Elizabeth Shannon, secretary of the Ohio Association and V. A. Esphorst of Missouri Valley responded. Mrs. Edna Vaughan, Treasurer, reported a small balance.

Officers of the coming year were elected as follows: Chairman, Robt. Walton, Indiana; Secretary-treasurer, Mrs. Edna Vaughan, Delta States.

Reporting for the Research and Marketing Departments of the National Association of Ice Industries, C. P. Austin said that the research on Ion exchange treatment of water at the University of Texas had been completed and that a popularized summary of this rather long and technical report would be available soon. He also touched on the work on corn icing in Ohio, peach hydrocooling and other technical projects. On the marketing phase, he said they need more complete tonnage reports and asked the secretaries to help in impressing upon the members the importance of these statistics.

Guy W. Jacobs, National Association Secretary, also touched on the importance of tonnage reports and urged the secretaries to work with their members in getting these reports in more promptly. Although tonnage sales are going down he said,

dollar sales are showing a steady upturn. This year tonnage sales will be down about four percent, but net returns will be up about the same amount. He said that the regional conferences held by the association last year were very successful and that they would be continued next year.

Paul Andres, President of the National Association called attention briefly to the convention program and said it was designed to provide information on present problems in the industry. He pointed out that the ice industry has formed a pattern the last several years of a down turn, followed by an up swing, and that now, in 1954, it seemed to be on the verge of increased sales.

Wm. T. Jobe, reporting on the legal and legislative picture, said there were no particular legal problems at present. But with the shift of political power in Congress, they could expect a swing toward more liberal and pro labor policies. An attack probably will be made on the Taft Hartley Act and the annual wage for labor may be a live issue. A drive to increase governmental expenditures with consequent postponement of a balanced budget may be expected, along with income tax revision favoring lower income groups, with no favorable legislation for business in sight.

The balance of the session was utilized for informal reports from the unit secretaries on the highlights of their program last year and plans for future programs.

By and large they appear to depend upon their annual conventions as their main features. Other activities reported included group meetings, preparation and distribution of a directory showing where truck icing is available, preparation of a credit card plan to avoid having to supply truck drivers with large sums of money, annual conference of engineers, spreading information among ice producers on the need for sanitary ice. At many of the group meetings much interest developed on the use of vending stations and their members are increasing.

Other comments included radio advertising, a large new ice rink in Chicago, preparation and circulation of a sanitary ice code, circularizing supermarkets regarding availability and service offered by ice, road signs of ice companies, contract forms for ice vendors, poultry and vegetable ice displays at state fairs and other gatherings, published lists of places where ice is available, safety program to reduce accidents.

Northwest Ice Conference

A CONFERENCE of Northwest ice men was held at the Winthrop Hotel, Tacoma, Wash., October 1, 1954. Nine ice men, representing eight different companies, six salesmen representing three associate member suppliers, one customer and one ex-iceman visitor were present.

Ray Burgess of Ranier Ice and Cold Storage Co., gave a talk on safety. He told of the experience his company had and how they had turned a rather bad safety record into a good one by getting all of the employees actually conscious of the need for safety.

Ken Davidson also told of some of their experience in safety work. He said his company had put in a written report system and told how their truck accident record had been improved very much by holding the driver responsible for the condition of his truck.

From a discussion of sized ice and containers for same, it was agreed by the group that paper bags were the best to use for this. There was some discussion as to whether white bags were an advantage over kraft but that was about all the difference of opinion on bags.

There was considerable discussion on vending machines and resale stations. While it seemed that everyone using vendors had more or less troubles with machines failing to work, also vandalism of various kinds, there is a universal agreement that some kind of a refrigerated station where ice can be obtained by the public easily is a must. Whether or not manually operated stations are better than vending machines depends on conditions of the locality but there is no question but what every town needs one or the other and that they are profitable.

With one exception this Northwest has failed to do much work on channel icing and the feeling is that we have been overlooking a bet. Even the one exception (Ray Burgess, Ranier Ice) did not feel that he had done what he should have done.

Punch bowls made of ice came in for some discussion. A few are just getting started on this and they seemed to find it easier than anticipated.

Following the conference members of the group, with the ladies had a very enjoyable dinner at the Tacoma Elks Club.

The next conference will be held at the Multnomah Hotel, Portland, March 16-18, 1955.

New England Ice Association

IN SPITE of hurricanes, wind and rain, the New England Ice Association held a combined business and social meeting at the Snow Inn in Harwichport, Mass., September 15 and 16.

No agenda had been arranged, and the business meeting was a very informal affair and as such, turned out to be very informative.

The following subject proved to be of very great interest, and will be looked into further. Ernie Groves of New Britain, Conn. showed a folder put out by the Canadian Ice Association. It was decided to have the Secretary obtain some of these pamphlets, and ascertain if New England members would be interested in having similar information compiled and printed and made available for next summer. The folders would be distributed at filling stations, motels, Chamber of Commerce offices, bulletin boards, etc. and other places where tourists would stop for information and service.

The Cape group of ice dealers combined in a collective program of newspaper and radio advertising during the summer months that was very well done. Warren Peirce had a display of the ads and gave the group the story of the program. There was 100 percent participation by the ice men on the Cape, and they were all enthusiastic with the results and will repeat the program next year.

Southwestern Ice Convention

THE MAJOR event of the year for the Texas ice men and their wives will be the Annual Convention at Corpus Christi, Wednesday, Thursday and Friday February 16, 17, 18, 1955. The Robert Driscoll will be headquarters.

More of the Convention plans will be announced later, but the known events are a Welcome Party, Wednesday evening February 16; an excursion boat luncheon and cruise Thursday afternoon on the beautiful Corpus Christi Bay with calls at the Naval Base and at some of the large industrial plants that have made Corpus Christi the great new port of America. The President's Annual Dinner, Dance and Floor Show will be held Friday evening.

Business sessions will be really business conferences on pressing phases of the ice business, the underlying theme being operation for profit.

Sweet Corn Grower Designs Bag Packing Machine

A MACHINE to apply ice to bagged sweet corn has been designed by Vernon Weingart near Kent, Ohio who, with his father, is growing and packing iced sweet corn for the market. The Weingarts sold 45,000 four-dozen bags of iced sweet corn to chain stores this year at premium prices. Thanks to Vernon's mechanized bag packing, they were able to turn out 3,000 bags of 12,000 dozen ears a day (300 bags per hour) during the peak of the season with a crew of seven at the icing and bagging end of the line. One of the buyers, Kroger Stores in Cleveland, reported a week of sweet corn sales that broke all records.

Weingart's bag packing operation goes like this: First the empty bags, held by four bag holders, swing in front of the packing girls who place two-dozen ears of corn in the bottom of each bag. On this layer they place 10 pounds of ice, then another two dozen ears, then another 10 pounds of ice. The filled bags are rotated to the unloading operator who takes them off, puts on empties, and refills the drawers with a fresh slug of ice. Then the filling process is repeated.

Cakes of ice are fed into a crusher supplying an elevator controlled by one of the operators. As ice is needed, this operator flicks a switch and crushed ice pours off the elevator into a small hopper over head. The switch is turned off and flat metal plates serving as the bottom of the hopper are swung out, allowing ice to fill two 10-pound compartments just below.

These compartments, like bottomless drawers, are pulled out on either side and their contents fall into the waiting bags. One secret of the bag-packing machine's success is that it handles ice fast, in small quantities, so it has no time to melt and clog the hopper.

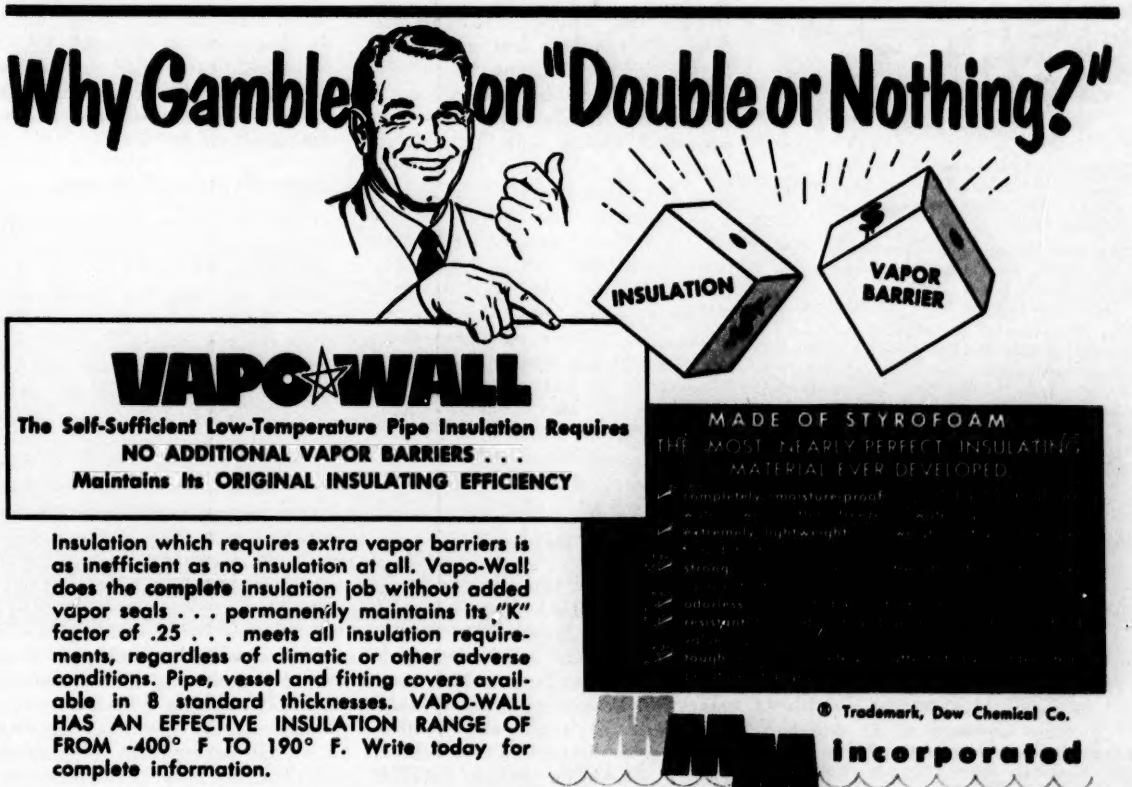
Mr. Weingart estimates that his corn is iced and bagged within 30 minutes after harvesting. His trucks, speeding to the stores, get the corn into consumer's hands while still at its best flavor and freshness. He believes in quality. He insists that every ear of corn must be carefully graded on the line, and makes sure that only Class A corn passes final inspection at the icing station.—NAII Ice News

State Truck Laws Affect Truck Icing

MANY icemen find their truck icing business materially affected by a factor over which they have relatively little control — state laws controlling the weights and sizes of motor trucks. Some ice men find their business hurt by being in a state which has a lower load limit than a neighboring state. In order to comply with the load restrictions the interstate trucker lets his ice melt out. Upon crossing into another state with higher load limits, he can then ice up.

Differences in state laws is something that has plagued the trucking industry through the years. Says an editorial in the Washington Evening Star: "The welfare of the nation's highway transportation industry is threatened by the lack of interstate uniformity on truck weights and sizes, and the breakdown in reciprocity among some states on motor-carrier taxes, according to Lewis C. Merkel, president of Market Service Inc., truck and bus insurers.

"The study of tax reciprocity now under way by the House Interstate and Foreign Commerce Committee is welcome," he said.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Chairman, Membership Committee: Wm. F. Orton, President, Nels Rosberg Co. Inc., San Francisco, Calif.

Appointed by the Board of Directors as Vice-Chairman of the Educational Committee was Guy R. King, Author of the text "Basic Refrigeration" and Refrigeration Instructor, Santa Monica City College, Santa Monica, Calif. The National Secretary, also an appointee of the Board, is J. Richard Kelahan, Technical Editor, INDUSTRIAL REFRIGERATION.

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Operating engineers of all refrigerating plants are invited to affiliate with the National Association of Practical Refrigerating Engineers, an educational association.

EDUCATION was the motive of delegates and members attending the 45th Annual Meeting, in New Orleans, November 2-4. Pleasure was the fortune of their ladies who accompanied the attendants. But, work was the lot of the national and local officers, and national past presidents who registered.

Quinn Gets City Key

Frank L. Chase, Louisiana Chapter President, Host, opened the annual meeting by introducing the National President, Leo J. Vivien, a New Orleans member, who presided. Following the invocation by Rev. James A. Greely, Assistant Pastor, Jesuit Church, New Orleans, the Hon. Vic H. Schiro, Vice-president of the New Orleans City Council welcomed the delegates, members and guests. Selecting Emmett T. Quinn, Past President, as a typical delegate and representing the membership, his Honor presented Quinn with an official scroll and a golden key to the city. (See fig. 2 for opening Officials).

Replying to the welcome, Past President Quinn was careful to note that Councilman Schiro was a native Californian, born in Hollywood, which probably accounted, he alleged, for Schiro's splendid showmanship. In his welcome, the City Representative had read a proclamation by the Mayor, deLesseps S. Morrison which honored the assembly by naming the dates of November 1-5 as "Practical Refrigeration Engineer's Week". (See figs. 1 & 5).

Name Change Rejected

Twelve papers, two discussion panels, and a field trip kept the delegates occupied from breakfast to dinner daily. Instruments, lubrication, high velocity air distribution, and sanitation in ice-making were covered in the first day's sessions. Wednesday sessions commenced at breakfast with a discussion "Shall NAPRE Change Its Name?" Effectiveness of the talk by Past President Walter E. Bernd (see fig. 7) was tested at the business session on Thursday, when delegates voted overwhelmingly NOT to change.

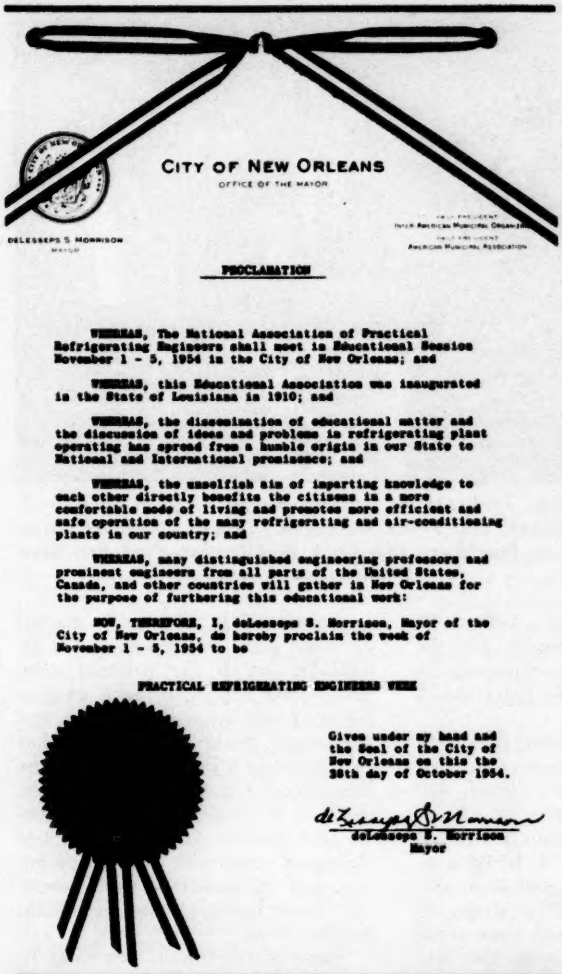
Other Wednesday papers covered modernizing of refrigeration equipment and operating practices in food processing and storage operations, accident prevention, and insurance service. Thursday sessions dealt with insulation, heat pump, automatic controls, and ammonia centrifugals. (Speakers, and descriptions of their talks, were listed in November 1954, INDUSTRIAL REFRIGERATION.)

The two discussion panels met at the Tuesday evening session. Insulation problems in connection with refrigerant piping, pressure vessels and duct work were tackled by one panel, while the other panel handled the discussion on the merits of florinated hydrocarbonated gases for cold storages as compared with present uses of ammonia. (For a photo of the panel, see fig. 4.)

Sugar Refining Witnessed

The field trip Wednesday afternoon included a tour of the Godchaux Sugar Refinery at Reserve, La. During this tour the delegates and their guests not only learned the sugar refining process by actual observation, but witnessed the application of refrigeration to the storage of bulk sugar. Three huge storage silos at Godchaux, capable of storing 22 million pounds of bulk sugar, are air conditioned to maintain a relative humidity of 36 percent, enabling the firm to package sugar at will in spite of normal 60 to 90 percent humidity conditions in that area. Engineers making the trip enjoyed the effect of low rh and witnessed the operations in the packaging rooms, which are also air conditioned.

Luckier ladies (44 from out of town) slept in most mornings, starting their programs at mid-morning. On Tuesday they participated in a walking sightseeing tour of Vieaux Carre, ending that trip with lunch



CITY OF NEW ORLEANS

OFFICE OF THE MAYOR

DELESSEPS S. MORRISON
MAYOR

PROCLAMATION

WHEREAS, The National Association of Practical Refrigerating Engineers shall meet in Educational Session November 1 - 5, 1954 in the City of New Orleans; and

WHEREAS, this Educational Association was inaugurated in the State of Louisiana in 1910; and

WHEREAS, the dissemination of educational matter and the discussion of ideas and problems in refrigerating plant operating has spread from a humble origin in our State to National and International prominence; and

WHEREAS, the unselfish aim of imparting knowledge to each other directly benefits the citizens in a more comfortable mode of living and promotes more efficient and safe operation of the many refrigerating and air-conditioning plants in our country; and

WHEREAS, many distinguished engineering professors and prominent engineers from all parts of the United States, Canada, and other countries will gather in New Orleans for the purpose of furthering this educational work:

NOW, THEREFORE, I, deLesseps S. Morrison, Mayor of the City of New Orleans, do hereby proclaim the week of November 1 - 5, 1954 to be

PRACTICAL REFRIGERATING ENGINEERS WEEK

Given under my hand and the Seal of the City of New Orleans on this the 28th day of October 1954.

deLesseps S. Morrison
Mayor

Fig. 1—Proclamation by the Honorable de Lesseps S. Morrison, Mayor, New Orleans, honoring NAPRE.

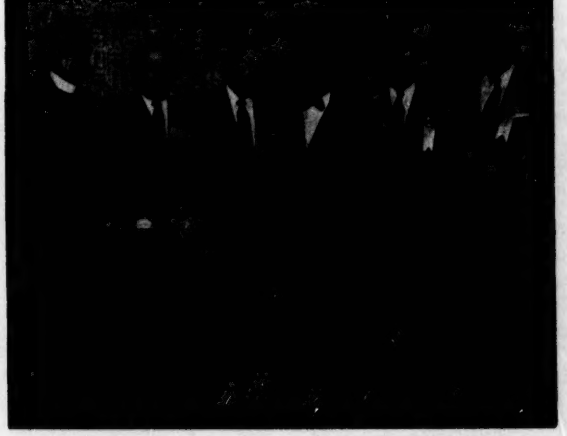


Fig. 2—Dignitaries and Officials who opened the 45th Annual NAPRE Convention: Father James A. Greely, S.J., Invocation; Emmett T. Quinn, Past President, Reply to Official Welcome; Leo J. Vivien, National President, Presiding; the Hon. Vic H. Schiro, Vice-President, City Council, New Orleans, Welcome; Frank L. Chase, President, New Orleans Chapter, Host; and Addison E. Wegener, Convention General Chairman.

Fig. 3—Visiting ladies were entertained at the Southern Yacht Club. Other tours for the ladies of the Convention included the Vieaux Carre, a sight-seeing jaunt over the city of New Orleans and a harbor trip on the yacht "Good Neighbor."

Fig. 4—Bureau of Refrigeration Information Panel which handled Tuesday evening session: Seated, Prof. A. M. Hill, Tulane, Prof. Harold P. Hayes, Calif. Poly., Chas. O. Livingston, Armstrong Cork Co., E. C. "Bill" Ward, United Cork Companies, Francis A. Yost, Pittsburgh-Corning Corp., Allan W. Cox, Owens-Corning Fiberglas Corp., Stanley H. Dickson, Pacific Lumber Co., and Dean Emerson, MMM, Inc.; standing, J. R. Kelaban, Moderator, and Bert C. McKenna, Session Chairman. Guy R. King, Author and John M. Luck, Louisiana Chapter Instructor, were also members of this panel which discussed insulation of piping and pressure vessels, and the merits of NH_3 vs. F-12 for cold storages.

Fig. 5—Proclamation declaring week of November 1-5, 1954 to be "Practical Refrigeration Engineer's Week", in City of New Orleans, is presented by the Hon. Vic H. Schiro, Vice-President, City Council, to NAPRE Convention Officials: They are, l. to r., standing, Leo J. Vivien, National President, Frank L. Chase, Louisiana Chapter President, and Addison E. Wegener, Convention General Chairman.

Fig. 6—New officers and their ladies posed at the annual banquet; l. to r., Mrs. John N. Mariakis and Sgt.-at-Arms Mariakis; Mrs. Leroy Etzel and 1st Vice-Pres., Etzel; President and Mrs. Regis Gubser; 2nd Vice-Pres. Bert C. McKenna; Treasurer and Mrs. Leland Kenagy; Secretary and Mrs. J. Richard Kelahan.

Fig. 7—Breakfast Session speakers; l. to r., Walter E. Bernd, Past President, Frank L. Chase, National Director, Presiding, and Erich B. Utescher, Past President, Publications Chairman.

at the Court of Two Sisters. Wednesday the sightseeing tour was set to wheels, the ladies enjoying a bus tour, followed by cocktails and lunch at the Southern Yacht Club (see fig. 3). The yacht Good Neighbor, was chartered on Thursday for a harbor trip. Ladies from inland areas had an opportunity to acquire sea legs, but no cases of sea-sickness were reported.

Evening Socials

The gentlemen caught up with the girls in the evening affairs, which opened with a gala two-hour informal party on Tuesday evening, climaxed by a splendid banquet, including dancing and a floor show. on Thursday night in the Grand Ballroom of the Roosevelt Hotel. The Tuesday evening informal was under the sponsorship of Owens-Corning Fiberglas Corp., and was held in the Gold Room of the Roosevelt. Wednesday evening, Louisiana Chapter No. 2, entertained at a special sea food dinner and party at Lenfant's Famous Boulevard Room. Finest varieties of sea food were presented to the gathering in dishes which would have carried the highest approval of Duncan Hines, had he been present.

Less fortunate than the ladies, delegates, members and guests in attendance were the local officers who were kept busy with their functions as hosts — the supervision of local activities and socials. Past Presidents of Louisiana Chapter prominent in these activities were Thomas O'Connor, J. J. Bryner, James Chaisson and Julius Prager.

Convention committees assigned more important work were: Nominations, chairmaned by Alvis J. Clay, past national president; Audit committee, headed by Robert J. Heartwell, member-at-large, Canada; Credentials committee, with John N. Mariakis as chairman; and the Resolutions committee, captained by George J. Whitman; the latter two of New Orleans.

National Directors alternated, each presiding over one business or educational session in the three day convention. Even prior to the official opening of the convention this Board was busy. They met at 10:00 a.m. Monday, November 1 and were presented with an agenda for study. At noon that day, they and their families were guests of Mr. and Mrs. Vic Leaveau at a barbecue luncheon at Waveland, Miss.

Enlarged Education Plans

Returning to New Orleans, the Board opened its annual session at 7:00 pm in the Baronne Room of the Roosevelt Hotel. Management of the association affairs for the past year, and the program for 1955 occupied most of the discussions. Most important item of business considered by the board was the Educational program. It was decided to split the work load of the committee and to establish a new position of Vice-Chairman. Under this new plan, the Board of Directors has assigned general supervision of the educational program to the Chairman, together with assignment of conducting the Question Box in INDUSTRIAL REFRIGERATION, the official organ.

The Vice-Chairman assists with the supervision of the educational functions in the capacity of chief instructor, specifically assigned to the task of standardizing the course of instruction now handled in the chapters. To achieve this objective, he is commissioned to prepare a manual of lesson plans, references and bibliography, which the national association will supply to each chapter for their educational committee and instructors' guidance. The board has also authorized the Chairman of the Educational Committee to revive the issuance of Certificates of Proficiency, and further designates the vice chairman responsible for the preparation of examinations which members must pass in order to obtain the certificate.

"Basic Refrigeration" by Guy R. King, published by Nickerson & Collins Company, has been adopted as the official text. Arrangements were made by the Directors with the publisher, H. T. McDermott, present at these sessions to provide each new member of NAPRE with "Basic Refrigeration", on approval of the member's application by the national office.

H. G. Venemann Memorial

A memorial was established by the Board honoring the late Professor H. G. Venemann. This memorial will consist of a loan-fund available to qualified persons in the refrigerating industry for furthering their education. The President of the Association was authorized to appoint a committee to set up the rules and regulations for administration of the funds, and the Treasurer was designated as Trustee. It was announced that the Trustee will receive contributions from Chapters, firms or individuals for the subject fund which is to be administered separately and aside from general and educational funds of the Association.

45th Meeting Eulogizes Prof. Venemann

NAPRE's. roll is called—and Prof. H. G. Venemann does not respond. In hushed and solemn tone, for him, another speaks and answers, "ABSENT"—he is not here.

To him has come the summons, to join the Innumerable Caravan which moves to that mysterious realm where each one takes His Chamber in the silent Halls of Death.

Behind him he left the Comradeship of those who called him "Brother", and in fraternal greeting grasped the hand that can be grasped no more.

Behind him he has left the fond companionship of wife and family who, in measure of his worth, appraise all men, and thus comparing, know the greatness of their loss. Their house is left to them desolate, for he is gone.

Still is the voice that oft joined ours in song and which was lifted up with ours in prayer; cold is the hand that always strove to aid; glazed is the eye from which shown forth the soul. The heart that ever prompted acts of love now feels the kind impulse no more. The lips that smiled a welcome to us all are set in that mysterious realm of death. We grieve, but not for him; we mourn, but for ourselves.

We may well pay tribute to his high moral qualities, unspotted integrity, unimpeached honor and character. If he had aspirations they were high, honorable and noble. He was ever loyal to his organization, sincere to his friends, a truly devoted husband and a loving father, who preached more by his examples than by words, imbued with an abiding Faith in the Omnipotent God.

If any of our Faithful departed could ever communicate to us, I am certain Professor Venemann's communication tonight would be:

"Be noble! And the nobleness that lies in other men, sleeping but never dead, will rise in majesty to meet thine own; Then wilt thou see it gleam in many eyes; Then will pure light around thy path be shed, And thou wilt nevermore be sad and lone."

We salute him in the words of a great writer—"His was a dynamic and deliberate Life, and the Elements mixed in with him, that Nature may up and say to all the World—There stood a Man.

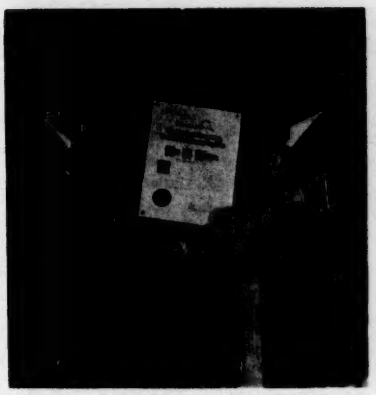


Fig. 8—Retiring President Leo J. Vivien, receives testimonial plaque from his successor Regis Gubser at Banquet Ceremonies.

And now might we say of our lamented Brother—

"A Race Well Run;
A Work Well Done;
A Victory Won—
Now Cometh Rest."

—A. E. Wegener

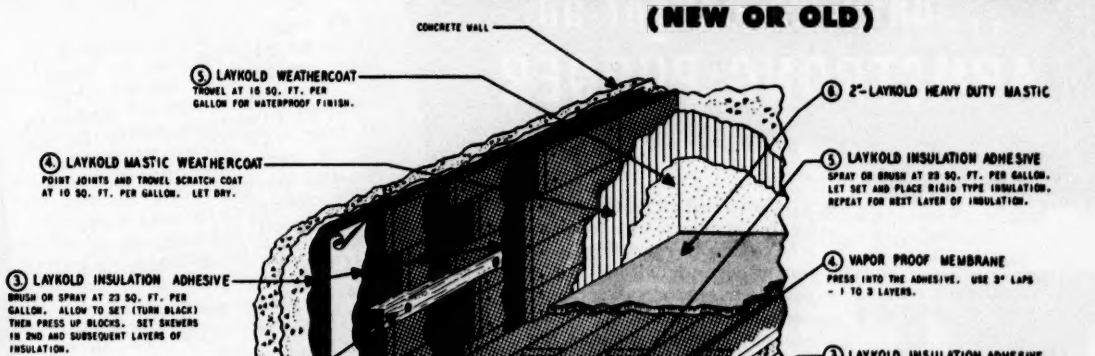
Revision of By-Laws

Numerous revisions to the by-laws were considered and referred to the Board of Advisors. This group, con-

Laykold®
ASPHALTED FOIL

DATA SHEET
No. 5

How to ANCHOR Insulation ON A CONCRETE WALL and FLOOR (NEW OR OLD)


CONCRETE WALL
5 LAYKOLD WEATHERCOAT
TROWEL AT 15 SQ. FT. PER GALLON FOR WATERPROOF FINISH.
6 2"-LAYKOLD HEAVY DUTY MASTIC
4 LAYKOLD MASTIC WEATHERCOAT
POINT JOINTS AND TROWEL SCRATCH COAT AT 10 SQ. FT. PER GALLON. LET DRY.
5 LAYKOLD INSULATION ADHESIVE
SPRAY OR BRUSH AT 23 SQ. FT. PER GALLON. LET SET AND PLACE RIGID TYPE INSULATION. REPEAT FOR NEXT LAYER OF INSULATION.
3 LAYKOLD INSULATION ADHESIVE
BRUSH OR SPRAY AT 23 SQ. FT. PER GALLON. ALLOW TO SET (TURN BLACK) THEN PRESS UP BLOCKS. SET SKEWERS IN 2ND AND SUBSEQUENT LAYERS OF INSULATION.
4 VAPOR PROOF MEMBRANE
PRESS INTO THE ADHESIVE. USE 3" LAPS - 1 TO 3 LAYERS.
3 LAYKOLD INSULATION ADHESIVE
SPRAY, BRUSH OR SQUEEGEE AT 23 SQ. FT. PER GALLON. LET SET (TURN BLACK).
2 4"x4" WOOD STUD
ANCHOR HORIZONTALLY TO CONCRETE ON APPROXIMATELY 16" CENTERS.
2 CONCRETE SUB-SLAB
IF YOU USE HYDROPEL INTEGRAL ADMIX AT 1-1/2 GALLONS PER SACK OF CEMENT, GIVES A DRY SLAB.
1 VAPOR PROOF MEMBRANE
(ASPHALTED FOIL-CREPE TYPE) 1 TO 3 LAYERS - 3" LAPS PRESS INTO THE ADHESIVE.
1 TILE OR GRAVEL FILL
FOR VENTILATION VS. FREEZING OF THE SUB-GRADE.

Write for Detailed Information

AMERICAN Bitumuls & Asphalt COMPANY

200 BUSH STREET, SAN FRANCISCO 4, CALIFORNIA

E. Providence 14, R. I. · Perth Amboy, N. J. · Baltimore 3, Md. · Columbus 15, Ohio
St. Louis 17, Mo. · Mobile, Ala. · Baton Rouge 2, La. · Tucson, Ariz. · Inglewood, Calif.
Oakland 1, Calif. · Portland 7, Ore. · Seattle, Wash. · Washington 5, D. C. · San Juan 23, P. R.

sisting of the 9 Past Presidents in attendance, reviewed proposed amendments and referred them to the delegates on Thursday afternoon, at which time they were amended. Discussions by the Board of Advisors concerning the amended bylaws, went on almost continuously from the Monday evening business session through Thursday morning.

At the Thursday afternoon business session, the delegates, at the recommendation of the Board of Directors, conferred an Honorary Membership on H. T. McDermott, editor and publisher of INDUSTRIAL REFRIGERATION, NAPRE'S official organ. Later, the Board also approved Honorary Memberships for J. R. Watson, Chicago, Chas. A. Conley, Memphis, and Burt C. White, Detroit. These gentlemen engineers joined John W. Neff of Chicago, the only surviving Honorary Member at the convening of this 45th Annual Meeting.

Membership Trophy Awards

The membership contest was reported on at the Wednesday morning breakfast session. Substituting for John T. Dabbs, National Chairman, Francis A. Yost, presented the Emerson Brandt Memorial Membership Trophy to New Orleans Chapter for acquiring the largest number of points in the contest. Louisiana Chapter No. 2 had 101 points. Runner up in the point contest was Los Angeles. This Chapter, California No. 2, acquired a total of 100 points. The small chapter trophy was awarded to Chicago for the largest percentage increase, 77 percent. In each instance, the trophy went back to the chapter which had earned it the previous year. Chicago's outstanding work of doubling its membership two succeeding years was specifically cited.

A preferential ballot was taken at the last business session of the convention, and confirmed by the board of directors at their meeting the following day, that the convention in 1955 should be held at Los Angeles. California Chapter No. 2 had tendered a bid for the 46th Annual Meeting. It had also circulated California Poppies, California grown English walnuts, and oranges to all delegates as instruments of propaganda to swing the selection of the convention site to their city. They came in for a great deal of good natured jokes and puns when the oranges which had been shipped to New Orleans turned out to be rather small and somewhat on the green side.

Closing Sessions

In resolutions passed during the concluding session, the membership expressed thanks and appreciation to Louisiana Chapter No. 2, Addison E. Wegener, General Chairman, and Mr. John J. Bryner in particular, for the very fine hospitality at New Orleans; to the exhibitors, including Pittsburgh Corning Corp.; Liberty Welding and Iron Works; J. H. H. Voss Company, Inc.; MMM, Inc.; H. A. Phillips Company; United Cork Companies; Aluminum Products Company; Owens-Corning Fiberglas Corp.; E. K. Strahan and the H. B. Howe Ice Machine Company for their support of the educational program. The convention also honored its department members with the usual Prayer. George J. Whitman, substituting for Addison E. Wegener, eulogized Professor Venemann. (Text of the Eulogy appears on page 33).

In keeping with its traditions, the NAPRE delegates, members, guests and families saw the new officers installed by Leo J. Vivien, the retir-

(Continued on page 43)

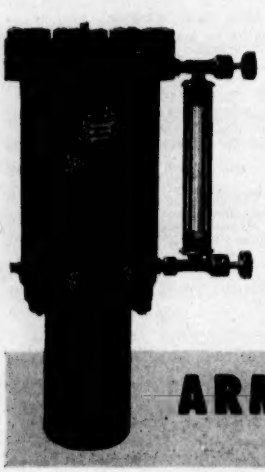
Our neighbors didn't like us
...until we bought an
ARMSTRONG PURGER

Gentlemen:

We used to have purgers which we had to run by hand. These would fill up and run over, losing a lot of ammonia. Our head pressure would be up and down. At times we would have to shut the engine room down and purge from the top of the condensers and lose a lot of ammonia along with the air. Our neighbors did not like this.

Now we have an Armstrong purger and our troubles have ceased.

Mr. N. F. Danaher,
Chief Engineer
The Borden Co.
Michigan Ice Cream Div.
Detroit, Mich.



● You won't smell up the neighborhood when you have an Armstrong Purger. It gets *all* the non-condensibles out of your refrigerant system with *negligible refrigerant loss.* Head pressures remain within a few pounds of theoretical. The purger pays for itself over and over again.

Bulletin No. 221, gives full facts. Send for your copy. Write:

ARMSTRONG MACHINE WORKS
860 Maple Street, Three Rivers, Michigan

ARMSTRONG FORGED STEEL PURGERS
SATISFACTION GUARANTEED

Liquid NH_3 Meter?

QUESTION NO. 1026. Is there a meter available for measuring liquid ammonia supplied to an installation for a temperature range of minus 10 to minus 45? What would be an appropriate charge per ton for furnishing ammonia at this temperature to a cold storage tenant?—C. C., Memphis.

ANSWER NO. 1: All our efforts to meter liquid ammonia have proved more or less unsuccessful. The only case which was successful at all, was a 40-ton air-conditioning load operating on a float control. The ammonia was fed through an all iron meter similar to a regular water meter. The meter read in cu. ft., and under our operating conditions of 15 psig suction and 185 psig head pressure, we figured 15 cu. ft. of liquid ammonia to one ton refrigeration. Depending on your own cost, charges for refrigeration should be between $1.50 and $4.00 per ton.

These meters do not work well unless the rate of flow is fairly high and uniform. They will record any gas bubbles the same as if it were solid liquid, which produces a very large error. Very low flows slip through without recording. Careful engineering calculations tempered by some experience is necessary to arrive at a rate which is fair and still profitable.

With irregular loads, we either charge by the ton of goods frozen per month with a minimum charge, or we calculate the average load the year around and agree on a flat monthly charge which is always the same even if the load does vary some. —R. G., Los Angeles.

ANSWER NO. 2: As stated above meters will record gas bubbles as if it were solid liquid which produces a very large error. According to the late Prof. H. G. Venemann, "less difficulty would occur with metering liquid ammonia, or any other liquid refrigerant, if it were "sub-cooled" before entering the metering device.

"Since the liquid leaving the receiver is usually "saturated" and not "sub-cooled" any warming effect is it passes along through the pipe or any pressure drop through either the pipe or the meter will cause gas bubbles. Many metering devices such as Venturi meters, orifices, rotometers, etc., depend upon pressure-drop in order to function. Consequently they become useless if the liquid passing through them is not pre-cooled sufficiently to prevent the formation of flash gas.

"Displacement meters are greatly in error when gas appears. Anyone who has used a reciprocating pump to handle hot feed water to a boiler has noticed how it races when the water becomes hot enough to produce a little steam, and how it slows down again when the steam is eliminated." —JRK

ANSWER NO. 3: We are handling anhydrous liquid ammonia in many fertilizer plants very successfully. Also at Oscar Mayer Packing Company, Davenport, Iowa, we have an installation for measuring and totalizing anhydrous ammonia.

NAPRE

Question Box

The National Educational Committee, NAPRE, answers monthly in this column, operating problems forwarded by members. The Committee appreciates answers from the field. Address questions and answers to Prof. Harold P. Hayes, Dean of Engineering, State Polytechnic College, San Luis Obispo, Calif.

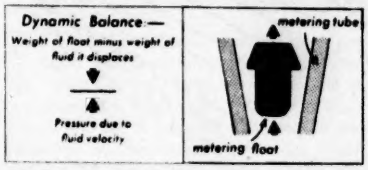

Dynamic Balance —
Weight of float minus weight of fluid it displaces
Pressure due to fluid velocity
metering tube
metering float

Fig. 1 — Basic variable-area metering elements.

Of course, we do not attempt to use a positive displacement type meter —such as a water meter or gas meter. The type of instruments which we recommend are area type — consisting of a tapered tube in

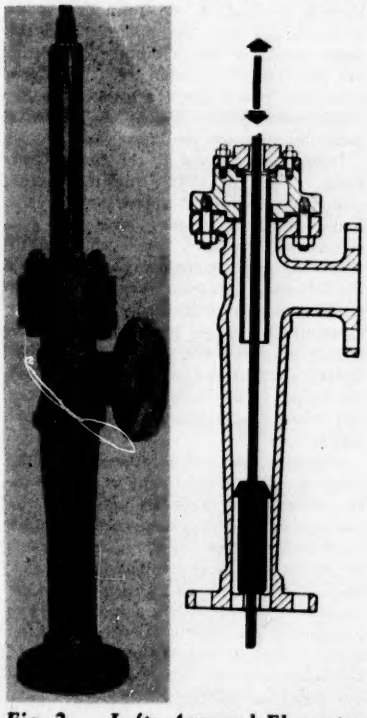


Fig. 2 — Left: Armored Flowrator meter with new magnetic visual indicating extension. Right: Cross section through armored Flowrator meter.

which rides a metering float (fig. 1.). Such an instrument can operate over a 12 to 1 flow range usually — that is, the ratio of maximum to minimum flow — and will operate quite nicely at either low or at elevated temperatures.

The instrument normally used is as illustrated in Fig. 2. If totalization is required, replace the indicating assembly with the totalizing head air auxiliary unit. Unless the flow is extremely small — say, in the neighborhood of 0.1 (one-tenth) gallon per minute, we are in a position to make a good recommendation.—Robert E. Johnson, Chicago.

Mechanical Cause For Synchronous Failure

QUESTION NO. 1027. This problem came up at one of our plants. A 10 x 20 inch horizontal double-acting compressor driven by a 175 hp synchronous motor would start O.K. and come up to speed. However, when the exciter was thrown on, the motor slowed down and would not "lock-in". The question of what was wrong turned out to be other than electrical. How many members have had the experience to answer this?—R. A. O'Neill, Texas.

ANSWER NO. 1—A broken discharge valve spring had dropped down under discharge valve and was holding the valve open.—R. A. O.'N.

ANSWER NO. 2—Didn't have a horizontal double acting machine like that in question, but had a similar experience. My machine was a 10 x 10 vertical Frick 2-cylinder single-acting in which the safety head was inserted in a canted position following replacement of suction valves. This machine had 440 volt synchronous motor which would "come into-step" until suction valve was opened and then she fell off the line, following this overhaul. It worked perfectly previous to that.

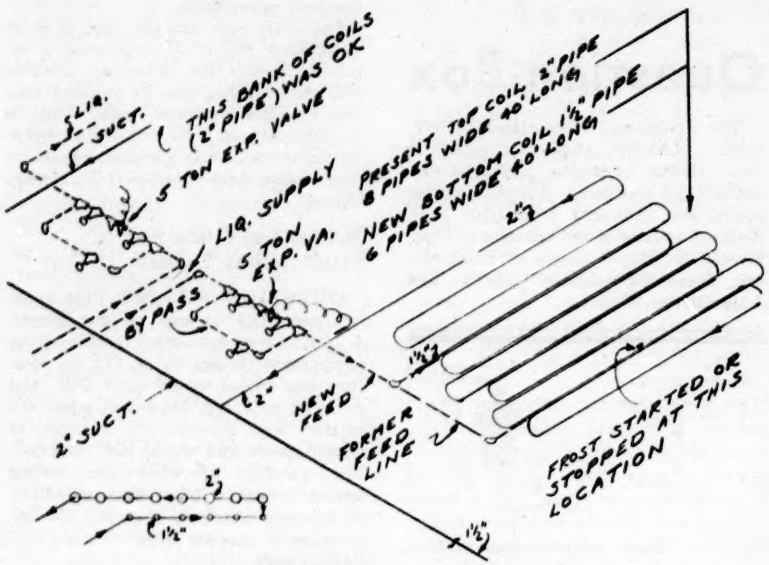
From this experience, I learned to look over mechanical end before jumping to conclusions. Electrical engineers were called in and they found nothing on their end in any trouble. Next thought was that one of the new suction valves was stuck open. When the head was removed, it was evident that the safety head had not properly seated, which threw the machine out of balance.—B. C. McK. Chicago.

Thermal Expansion Valve Fails Coil Extensions

QUESTION NO. 1028. An existing set of 2-in. pipe coils was increased by adding a set of 1¼-inch coils below them. A 5-ton thermal expansion valve was installed leading into the 1¼-in. coils. The 1¼-in coils are new pipe with welded tube turns on the ends, and they are cut into the 2-in. coils where the liquid line originally entered.

There are two identical set-ups like the above. One set worked fine for a while; then the bottom set would not frost over. It was believed that the power unit on the thermal valve had failed, so the hand expansion valve was used. When using the hand expansion valve, the bottom set would not frost over.

Enough liquor was then allowed to enter and the bottom set of coils



Plan View Showing Layout of Pipe Coils

frosted over, but the top set thawed. The hand expansion valve was again opened until both sets of coils frosted over; then the machine (9 x 9 in.) frosted over the cylinders, too. When the expansion valve was cut down to where there was no frost on the machine, one or the other set of coils would thaw and start dripping; the other set of coils operated satisfactorily. A new power unit for the thermal valve has been ordered. Is that the answer?—Henry Black, Texas.

ANSWER: Above you will find pictured a layout of the subject coils. Please note that this is a plan view and that the new 1½-inch coil was hung below the existing two-inch. Note also how the feed was changed.

After opening the coils at the thermovalve and allowing the pressure to flow back through the opening, we got approximately a cup of oil and scale out of the coil. We placed a new power unit in our thermo valve. At the present time, functions of the coil are back to normal.

Gauge Glass Coloring

QUESTION NO. 1029. On a large tank where we cool water for air cooling coils is a gauge glass for ammonia level. The ammonia suction lines are connected to the compressors and the feed lines come from the receivers. Now these receivers feed all other ammonia lines and all are interchangeable. The ammonia in receiver glasses has its normal color but that in the water cooler shows green. This glass is a boiler glass with a red stripe running up the length of it. Has this red stripe any bearing on the color or is it the structural qualities of the boiler glass that gives the ammonia a green color?—R. G. S., Buffalo.

ANSWER: Corning Glass Works advised as follows, with regard to the question on the water cooler gauge glass. "All glass items are manufactured and tested for refractive index. This is based on the wave length of the sodium D line and is measured on annealed samples. In your customer's application the refractive index of the gauge glass not submerged in the water would be much different than the one that causes the color green to be predominant. This is the gauge that is in the water cooler which changes the refractive index bringing out the green shade."

Information relayed to the Crane Company was not sufficient, giving the impression that the green appearance of the liquid ammonia in the cooler had just started to take place. Mr. P. S. Pagratis with that firm, immediately replied with the following important suggestion. "Your discoloration is undoubtedly due to line contamination caused by the ammonia contacting a brass valve, fitting, etc. The resultant chemical action of ammonia with the copper in the brass is forming a green salt which has a color similar to copper sulfate."

Although this was not the case in the above question, it does serve as a reminder to refrigeration engineers to verify the components used in water coolers or other applications where ammonia refrigerants are to be used. It also emphasizes the fact that all details of information should be included when presenting a problem. (The omission of sufficient details when writing Crane Company was the responsibility of this column and not the party who referred the question.)—JRK

Control of Humidity In Cheese Storage

QUESTION NO. 1030. My firm is storing one million pounds of cheese, lightly paraffined at 34 F for a new customer. The storage space has sodium chloride, bare-pipe coils for refrigeration. The humidity of the room is 82 percent and I'm trying to reduce it to a desired 70 rh. What suggestions or experience can the NAPRE members offer? I have tried some calcium chloride desiccant.—H. B., Milwaukee.

ANSWER: Suggest following these steps, which I have used from time to time depending on product load, degree of rh and temperature requirements of room, and physical condition of room with regard to heat and vapor penetration: (1) Try lowering your brine temperature to increase TD which will help lower your rh. (2) If unable to lower temperature, then apply more coil surface and control temperature by applying heat through steam coil, or electric heaters. (3) Maybe your calcium chloride wasn't applied in sufficient quantities. If merely spread in a few pans, it is often inadequate. Have you tried a rack where a series of pans can be pyramided and air circulated through the rack by means of a good sized fan?—H.B.R., Chicago

New Questions

Floor Heave Problem

QUESTION NO. 1031. We have a room, 14 x 12 x 7½ ft high, in the basement of a drive-in restaurant, which the owner wishes to use as a storage freezer. This room is lined with cement building blocks, there is a 3 inch slab of concrete on the floor and the ceiling is the restaurant floor. Earth surrounds three sides and bottom. The builder claims that the area is well drained, but dampness is appearing around the edges of the floor and in the corners. The floor is recessed 8 inches below the basement floor.

We are afraid to go ahead with this installation, without taking the necessary precautions to keep the ground from freezing. It has been suggested that we use electric heating cable. If this is feasible, please advise how much should be used and how it should be installed. We plan to maintain a temperature of 0 to minus 10 F.—J.V.B., Detroit.

Bulging Ice-Cans

QUESTION NO. 1032. Thank you for your answer regarding crankcase regulators which I sent in some time back. Now I have another!

We have a 20-ton ice tank here with brine as the secondary refrigerant and ammonia the primary. The brine is continuously circulated through the evaporator and kept in agitation. We freeze the water in 300-lb cakes, in cans approximately 1 x 2 x 5 ft., at 15 F.

Some of the cans have swollen due to the expansion of ice and are bulging out about the middle of the two foot side. What causes this? We have operated this plant for ten years and this is the first time.

What is the proper way of painting and maintaining these cans?—C. B., Alaska.

Small Plant Operator Has Suction Problems

QUESTION NO. 1033. I have a 6 x 6 in compressor working with an

ice tank and a cold storage room. The compressor is rated by the manufacturers at 360 rpm, but I have it running only 250 rpm.

The ice tank is rated at five tons capacity. It is equipped with suction trap and lowfloat ammonia regulator. The ice tank is insulated with 6-inch insulation at the bottom and 12-inch on the sides. The cold storage room is 46 x 15 x 10 ft. high, well insulated with 9-inch insulating wool. Coils of 1¼ inch pipes on both long sides of the storage room constitute the evaporator. I maintain it from 38 to 45 F because it is only used for cooler purposes.

It happens that when the ice tank is working by hand operation, in case the float valve is taken out for repairs, I can get 18 to 20 psig in the suction line to the compressor. When the ice tank is working with the float valve, I cannot get less than 30 to 35 psig. The high pressure of the double-pipe condensers of 26 tubes 2 inch OD and 20 ft. long each, varies from 165 to 180 psig. When the cold storage room is empty I shut off the liquid entering to it and the temperature of the room naturally raises sometimes over 80 F. I note the ice tank is not giving the rated tonnage when the cold storage room is working, although the output of the ice is done correctly.

Although I reach the conclusion that the 6 x 6 compressor working at only 250 rpm has sufficient capacity to work with the ice tank and the storage room.

(a) do you recommend installing another compressor for the storage room?

(b) is there any reduction in the refrigerating capacity of a compressor due to the wear of cylinders and pistons?

(c) Is it good practice to shut-off the liquid entering the evaporator in the cold storage room when empty, instead of leaving it at the temperature stated? Would this disturb the suction temperature of the rest of the system due to the high temperature in the room when empty and the expansion valve totally closed?

(d) when the ice tank is working with its low pressure float regulator, does it give more refrigeration on account of its flooded condition although I cannot get the 18 to 20 psig that I get when it is hand throttled?—J. Gonzalez Prieto, Playa Ponce, P.R.

News Notes and Chapter Activities

Chicago

BILL O'REILLY

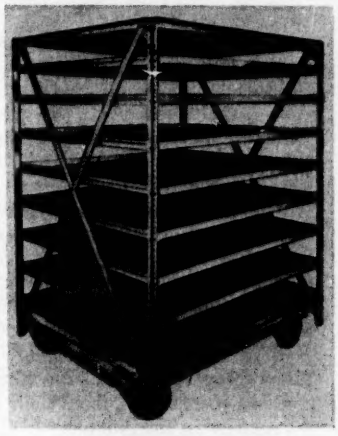
EVAPORATORS was the chapter from Basic Refrigeration discussed September 14 by George Anderson, Association of American Railroads, our preliminary class instructor. He diagramed and worked out problems on the board so that we could understand the subject more clearly. He asked members questions in the back of the chapter and in turn answered questions that members had on the subject. Dick Kelahan, National Secretary, concluded his lecture seriees on Chapter No. 18, "Refrigeration Enclosures". He told of the different types of refrigerator doors, how they were constructed, what they were constructed of, and where to apply these doors. He also related a few experiences with different types of doors.

Dick Zach, York Central District, was our instructor for the September 28 preliminary class. At the beginning of the class he gave a two question written quiz. We were given ample time to think about the questions and to answer them. After everyone had turned in their paper, we then had a general discussion concerning these questions. Problems were worked out on the board and explanatory diagrams were drawn. Papers are going to be marked according to points, and after a certain length of time we will see who has the most points. Of course, new members who have not been at all the meetings, and members who are just starting out in the field will be given a handicap. It should prove to be very interesting.

Bill Tiffin, Ideal Electric & Mfg. Co.

(Continued on page 39)

FREEZER TRUCKS



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From the President's Desk

Official NAPRE Calendar Announced

MANAGING the affairs of NAPRE is its Board of Directors. The Directors are representatives of the membership; they are chosen through your delegates to the annual meeting. Their decisions and planning is the reflection of your wants and ambitions. The following calendar might be said to be your own chapter's work schedule for the coming year, since the Directors devised it through your request, suggestions, and resolutions collected during the past year:

Educational Committee

Prof. Harold P. Hayes, Chairman
Guy R. King, Vice Chairman

Our educational program this coming year contains no elaborate departure from our present activities for the period from December 1, 1954 to April 1, 1955. 'Local option' is to be exercised with regard to the course of instruction within the chapters. Your national committee urges continued use of 'Basic Refrigeration' by Guy R. King, with actual instruction at the chapter meetings.

It is further suggested that each chapter *hold at least one Question Box Session per month.* Depending upon the nature of the questions, each chapter should be able to handle from one to five questions per session. Please forward the questions submitted, together with any answers given, to the national office. Questions of specific interest to the entire membership will be published in our official organ, *Industrial Refrigeration.* Those of a general nature will be cataloged and retained in our national files. To complete your educational program, it is suggested that you continue the policy of presenting speakers, audio-visual aids and other informative refrigeration or allied programs of current, local or text tie-in interest.

To Issue Certificates

About April 1, 1955 your educational committee will offer a plan involving the use of the Guy R. King text, toward the Certificate of Proficiency provided for in our By-laws and toward which the educational course will be directed. In order to qualify for examination for the Certificate, members must have three years experience and/or follow the course of instruction in the chapters as prescribed by the national committee.

Your educational committee is to provide the chapters with a lesson outline (manual) with references and bibliography material for the chapter instructor's use. Your committee is further responsible to the Board of Directors for preparing examinations and conducting the same through the local chapter educational committees.

Membership Committee

William F. Orton, Chairman

For the period December 1, 1954 through May 15, 1955, NAPRE will conduct a membership drive in the refrigerated warehouses, cold storage and ice industries on a national basis. Your national committee will circulate letters to the management of these industries and their associations, during the first week of the drive, acquainting them with NAPRE and its activities.

In mid-December, a letter will go out to engineering prospects in these industries inviting them to join NAPRE through the local chapters. Leads on these engineering prospects will be provided to the chapters. Local committees are requested to follow through with personal contacts, and with invitations to the prospects to attend local chapter meetings. An $8.00 initiation fee will become effective on January 1. It is, therefore, suggested that the local follow-up be started on or after January 1.

Air Conditioning Drive

From May 16 through October 15, 1955 your national committee will be soliciting your assistance and cooperation in connection with a membership drive within large air conditioning plants. The plants specifically pinpointed for this drive by our national Board of Directors are those plants within public buildings such as banks, offices, theatres, department stores; in institutions such as hospitals, sanitariums, clinics; and in utility installations such as your local telephone dial exchanges."

Publications Committee

Erich B. Utescher, Chairman

As established in our national convention of 1954, *Industrial Refrigeration* continues to be the monthly Official Organ of NAPRE. With this issue, the NAPRE section of the Official Organ acquires new space. This new page, as you see it here, is to be the *official* page in which association announcements, awards, calendar of events, and the like will appear. National committeemen, chapter officers and the membership in general may look forward to official statements of the association on this page, and be governed accordingly.

Your publications committee looks for more chapter reports. Streamline versions will enable the committee to give space to all chapters. Our Question Box, enlarged to five average-size questions in 1954, will endeavor to maintain the same very fine service in 1955. Here again your committees request more active participation by the chapters. In the past, most of the questions received and published were contributed by Members-at-large.

The Operating Data Book

NAPRE'S own annual publication, *The Operating Data Book,* will make its appearance on June 1, 1955. Closing deadline for copy, both editorial and advertising, is May 1. Editorial matter will be the convention papers presented at the 45th Annual Meeting at New Orleans. Members not fortunate to attend these conventions are thereby provided an opportunity to acquire the same educational information as the delegates or attendants. Chapters are encouraged to participate in the management of our annual publication. New Orleans and other chapters have helped themselves in financing educational programs such as the 45th convention just passed, from their share of activity in the Annual.

Like the Board of Directors, the three National Committees involved in the above activities, are representative of the membership. And the relationship shouldn't stop there! Your active participation and cooperation will make each activity — education, membership, and publications — an outstanding success. Support of your local chapter committees in these activities means most to a successful year at the national level.

Regis Gruber

Chapter Activities

(Continued from page 37)

gave a very good talk on "AC Motors & Power Factor". He gave a general outline useful to the operator and based on recent inquiries to the Question Box. He then asked the specific members what troubles they had in their particular case with electric motors. It seems that dirt was the cause of most of the trouble. Bill gave a few pointers on how to clean motors, and how to take care of them. Nine members of the chapter were elected delegates to the National Convention. John Neff, Central Cold Storage Co., was elected to be the chairman of delegates. Alternates were elected also.

On October 15, a banquet was held for the purpose of honoring our Past President, Bert McKenna. This certainly was due Bert because of his untiring efforts and accomplishments to the Chicago chapter. The banquet was a huge success with the best attendance in 12 years. Dick Kelahan, National Secretary, was the "MC", substituting for the late Prof. H. G. Venemann, who had passed on that very morning as he prepared to come to Chicago. On behalf of the chapter he presented Bert with a plaque showing our appreciation and esteem. Mrs. McKenna was given a more practical token of our esteem because of the encouragement she gave Bert, and for the interest she took in his work.

Cocktails were served before dinner, and afterward we had some individual musical renditions which was followed by community singing. Among the out-of-city guests, was Geo. B. Bright of the Detroit chapter, one of Bert's close friends and staunch member of NAPRE and ASRE.

Through the efforts of Archie Waterbury, chief engineer, Heidelberg Brewery, and John Moyer, Supt., Hooker Electrochemical Co., the largest number of members joined the chapter at one time since its organization. Waterbury brought in seven new members from Heidelberg and Moyer had eleven from Hookers. Pres. Moyer and Jim Bennett past secretary of the Seattle chapter welcomed the seven members from the brewery. Jim gave them an excellent talk on the educational features of the NAPRE, and stated that by attending meetings regularly and taking part in the educational programs that they would obtain a well rounded knowledge of refrigeration in all its various fields.

On October 20, members took part in a field trip through Carstens Packing Co. plant. Otto Stolz, Master Mechanic, and Clarence Mase, Chief of Maintenance were the guides for the group. The tour was very interesting and educational. Stolz stated that there was a total of 365 tons of refrigerating equipment installed.

Tacoma

ELMER JOHNSON

TACOMA City Light Administration Building heat pump installation and associated air conditioning equipment was the subject of a talk by Mr. Wing of Worthen & Wing, consulting engineers, at our October 6 meeting. Mr. Wing gave an excellent description of the air conditioning system. He stated that contrary to the criticism prevalent in regards to the cost and operating expense of the system, that it has been proved, after a year's operation, that the installation not only cost less than any comparable air conditioning system, but the operating cost is lower than could be obtained with any other type of plant.

Because of the high heat gain, (over 2,000,000 Btu per hour when the building is occupied), and the balanced system at 47 F, which condition prevails during a large part of the year, the operating costs are very low. Two 150-ton Trane centrifugal compressors, two deep wells, pumps and related air conditioning equipment does the job.

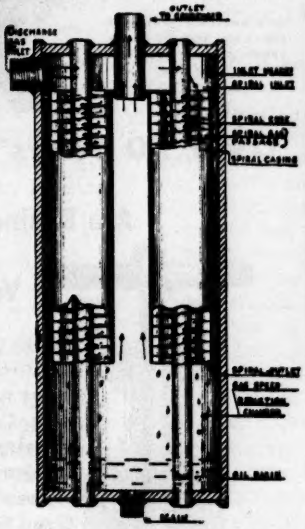
Texas Coastal Bend

VERNON KUMMEL

OUR instructor, Dan Miller, had the questions at the end of Chapter I, "Basic Refrigeration", answered by the members who volunteered at the previous meeting. Each problem was worked out on the blackboard and a discussion of the principles used, was made by Miller. Two guests were present at this meeting: Fire Marshall Kirby and Fire Inspector Busker, Corpus Christi Fire Department.

"King Zeero"

OIL SEPARATOR



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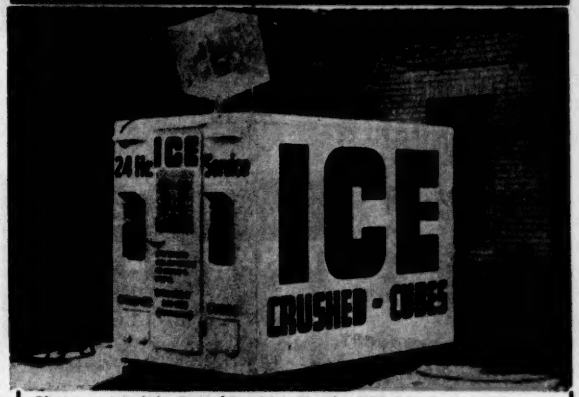

Photo: Model C-2 (Double Unit) POLAR Processed Ice Vendor. This unit sells handy packages of both cubed and crushed ice.

Conveyor Capacity (each belt) 40 10# bags
Storage Capacity 350 10# bags

Model C-1 (Single Unit) POLAR Processed Ice Vendor also available.

Write or Wire Today for descriptive literature and prices.

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MONTGOMERY, MINNESOTA

San Francisco

LEWIS BROOKS

A FIELD trip, September 8, was a special function for California Chapter No. 1 since it was "Ladies Nite". A tour was made of the new, modern Spreckles-Russell Dairy, scarcely a year old. A large group of members and their wives made the tour. Two members, Joe and Fred Imsand, who are engineers of the dairy, put on the entire show. They not only conducted an interesting tour, but also turned in a good performance as caterers.

Many of the "Native Daughters", used to the warm California sun, were exposed for the first time to temperatures of minus 20 F in the ice cream hardening room. Needless to say, they did not stay too long in that frigid climate. Another point of interest to all was the ice cream making equipment. A detailed explanation was given of the ice cream specialty tank where multi-color bars and popcycles are made. Refreshments followed in the form of cake and sandwiches made by the ladies, and all the ice cream and milk to satisfy any appetite was donated by our gracious host, Spreckles-Russell. (This plant is described in an article in this issue.)

At our October 13 meeting, two movies were shown by Henry Guilmette; one entitled "Overcoming Objections", being an interesting demonstration of good sales technique and not what some of our more intrepid members surmised; and the second movie an educational one on basic laws of physics.

Henry Guilmette, our educational chairman, presented a new idea on educational programs. Each member would be asked to give a talk on his favorite subject in line with his work responsibilities. Two men would be assigned for each meeting. The purpose being to create more interest, diversified subjects and stimulation in the program. A motion was made and carried accepting the new plan.

Dallas

GEORGE F. STEWART

IT WAS back to school at Alford's Refrigerated Warehouse on September 20, 1954. Plans were made to really get the fall meetings off to a good start. On October 4, E. R. Hallowell conducted refrigeration lessons. The City of Dallas as a whole has a serious water problem. Therefore, Hollowell held a floor discussion on that subject, following the course. Everyone seems to have a problem, but no one a perfect answer. Dallas' water supply is coming from wells, lakes and rivers, all mixed, with a high mineral concentration. Hollowell suggests a continuous bleed off of towers in spite of shortages. About the only real answer it was concluded, was an 8-inch rain to fill the lakes. This leaves us looking for a "blue norther" or an exchange of geography with Chicago.

Green Bay

JIM SCHOUTEN

THE GREEN BAY Vocational School was the site of our October 20 meeting, our first at this location. After the "sound-off", movies describing refrigerant controls were shown. This was the Alco film recommended by the national educational committee.

A discussion followed led by President Lester Winkler and program chairman, Harvey Wishart. It concerned getting the instruction class organized with a regular instructor so that future meetings could get down to a regular routine of formal instruction periods. President Winkler appointed a committee of Wishart, Secretary Jim Schouten and himself to meet with the Director of the local Vocational School to arrange for a regular instructor or tie-in with the Vocational School refrigeration course. He then asked for nominations or volunteers to handle the terasurer's work until the next regular election of officers. Nick Mastricola volunteered to take over this job.

At this point the president explained how some of the larger city chapters arrange to have panels of members guide and conduct the discussions on the refrigeration course. He appointed Bert Bodart, Armin Reinert and Harvey Wishart. The panel immediately began with Lesson No. 1 in the instruction course, with Bert Bodart reading each paragraph and with explanations and amplification being given by the other panel members.

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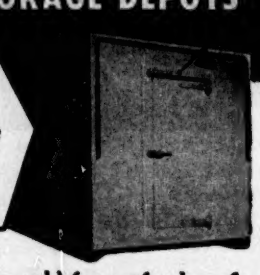

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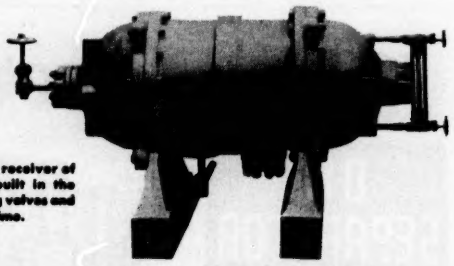

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Rio Grande Valley

ARMIN DONEIS

PINCH-HITTING instructor, Armin Doneis, resumed the study of Condensers in Chapter 7 of the Guy King course. Angus Casberg described an interesting experience which he had many years ago as a young engineer in a plant using a bleeder type amonia condenser. He accidentally discovered a simple way of desuperheating the incoming gas and reducing head pressure. It happened inadvertently when the concrete pan under the condenser became flooded and water level rose enough to submerge the main gas header. It worked so well that the plant was operated that way purposely for several months, effecting a considerable saving.

A. M. Casberg was elected official delegate of this chapter to the NAPRE convention in New Orleans. Oscar L. Ransom entered his application for membership in the NAPRE, and vice-president Dan Chapman, presiding made him welcome.

New Orleans

DAN BEHRE

EDUCATION Chairman Marion Olivier conducted the educational program with (Prof.) John Luck as instructor, at the regular monthly meeting of Louisiana Chapter No. 2 on September 22. Guy King's Basic Refrigeration, chapters 10 and 11, on refrigeration cycle were presented. A large reproduced pressure-entropy chart was used to illustrate the Freon refrigeration cycle.

With the date of the National Convention near, regular business was disposed of except the reading of new applications for membership and initiation of three new members. The meeting was then assigned over to the various convention committees. Entertainment Chairman Jerry Vieages outlined his program, and received much attention when speaking about this important phase of the program.

Plant Maintenance and Engineering Conference

THIRTY-SEVEN sessions have been arranged for the three-day Plant Maintenance and Engineering Conference at the International Amphitheatre, Chicago, January 24-26, it was announced by Clapp & Poliak, Inc., founders and producers of the meeting. L. C. Morrow, consulting editor, Factory Management & Maintenance, will act as general chairman. The conference, largest industrial meeting of its kind, is held concurrently with the four-day Plant Maintenance and Engineering Show.

Changes in conference hours, and use of the new $2,000,000 exposition hall by the exhibitors, will permit visitors to attend both the show and conference during non-conflicting hours. General sessions of the conference, will be held mornings in the arena of the Amphitheatre, directly adjoining the exhibits.

Safety Progress in Ice, Cold Storage and Locker Industries

AT A meeting of the Ice, Cold Storage and Locker Division of the Food Section, National Safety Council, it was announced that W. F. Leonard, Jr., Chairman of this Division has been promoted to membership chairman of the Food Section. Taking his place will be Frazeur DuBois of Seabrook Farms, Bridgeton, N. J. The meeting was held in connection with the annual Safety Congress, held at the Morrison Hotel, Chicago, October 18-22.

Report of the activities of the Division was presented by Mr. Leonard and plans for the coming year were discussed informally. In general, the program for next year will include talks at association and company meetings, mailing safety information to Division members, exhibits, posters and magazine articles.

Safety Information Wanted

During the last year monthly requests to key people in the industry for reports of monthly details of their employee injuries and vehicle accidents were sent in to accumulate some figures on frequency and severity of accidents with the ultimate goal of reducing accidents. Various safety materials were sent out by the committee to other key people in the industry and in safety education work. These included safety exhibits at ice conventions, arrangements for speakers at association conventions, safety articles in publications, safety promotional letters and a membership drive for new members. Requests also were put out to association secretaries to promote safety at all their meetings with a request for more accident prevention efforts.

Safety speakers for convention programs were supplied to the Texas Frozen Foods Association, National Association of Ice Industries, Delta States Ice Association, Northwest Ice Association, Ohio Association of Ice Industries, Eastern Ice Association, North Carolina Ice Association, Oklahoma-Kansas Ice Association, Southwestern Ice Association, and Florida Ice Association.

Safety exhibits were shown at conventions of the Delta States Ice Association, the Oklahoma-Kansas Ice Association, and the Southwestern Association of Ice Industries. A total of 30 safety articles were published in trade magazines, and 6,750 letters on safety promotion were sent to key people in the industry. A total of 320 letters were sent out with application blanks sponsoring membership in the Food Section of the National Safety Council. The net result of this was three new members and three live prospects.

Contacted Chapters

The committee contacted each chapter of the National Association of Refrigerated Warehouses about five times during the year, urging them to promote safety through their organization and to place safety speakers on their regional and regular convention programs. The replies from these were very encouraging and show considerably more interest from these people and also from the Ice and Locker Associations during the last 12 months than ever before.

Luncheon Meeting

At a luncheon meeting of the Food Section Wednesday, an award was presented to Clifford McBride, Pabst Brewing Co., Milwaukee, retiring chairman of the Section, as the outstanding safety engineer of the Section. The award was presented by Robert C. Leitner, Libby, McNeil and Libby, Chicago, newly elected chairman.

Management's Responsibility

The feature of this luncheon was an address by Robert Ewens, Executive Vice-president, Wisconsin Manufacturers Association, on "Management's Public Responsibility." Mr. Ewens said that business men generally must take a more active part in politics and public affairs to counteract the efforts of those who would turn our capitalistic system toward an intensified form of government planning and direction of all business.

He reminded his audience that business interests of the United States are engaged in a struggle with forces that would change our philosophy of government and active participation of business men is needed to counteract this and strengthen rather than weaken our present system which has served so well for so many years. He pointed out that American industry, without government direction, has been doing a good job on safety, chiefly from a humanitarian standpoint.

Turkey Storage Stocks

IN cooperation with the National Association of Refrigerated Warehouses, the Institute of American Poultry Industries has issued a report on classes of turkeys in storage at the close of business September 30, 1954.

Reports have been received from 228 NARW warehouses, compared with 243 covered in the October 15 revised report last year. These 228 warehouses are located in 143 cities in 41 states. Out of these 228, 57 had no turkeys, compared with 70 last year. The remaining 171 warehouses reported a total of 50,152,140 pounds in storage. Of this amount 215,544 pounds were unclassified, held in six warehouses — compared with 759,601 pounds unclassified held in seven warehouses in the 1953 report.

The balance, 49,936,596 pounds, held in 165 warehouses in 116 cities in 39 states, shows the following breakdown by classes:

This special classified report it is pointed out should not be used the same way as the USDA totals are used. The figures shown above cover only NARW members. Nor do they include any turkeys held in other than public warehouses. The value of this special report lies in the percentage figures for different classes of turkeys, which can be applied to USDA totals for October 1 to provide a fairly close estimate of the national holdings by classes.

	1954		1953	
	Pounds	% of Classified Total (49,936,596)	Pounds	% of Classified Total (45,612,992)
Evisc. tom turkeys	20,349,425	40.75	16,428,732	36.01
Evisc. hen turkeys	23,022,101	46.10	20,611,831	45.19
Evisc. broiler-fryer type turkeys	3,647,598	7.31	5,031,838	11.03
N.Y. dressed tom turkeys	2,303,480	4.61	2,274,985	4.99
N.Y. dressed hen turkeys	613,992	1.23	1,265,606	2.78
TOTAL	49,936,596	100.00	45,612,992	100.00

Cold Storage Industry Advisory Committee

THE USDA Cold Storage Industry Advisory Committee held its second meeting in Cincinnati recently. Industry suggestions with respect to the storage contract were discussed and will be incorporated in a new "Contract for Storage and Services" to replace the old "Offer to Store."

A new "Warehouseman's Manual" to replace the old "Warehouseman's Guidebook", also incorporating industry suggestions, was reviewed. It is reported that all objectionable features of the old "Guidebook" have been eliminated. The new "Manual" concerns itself principally with documentation procedures in connection with shipping, receiving, billing, etc. It is reported that copies of both these documents will be furnished to warehousemen as soon as available.

USDA reported that it is giving serious consideration to taking out a blanket bond which would eliminate the necessity for warehousemen storing CCC owned goods of taking out their own individual bonds.

Other subjects discussed included civil defense and policies with respect to storage locations of CCC owned goods. —NARW Quick Sheet.

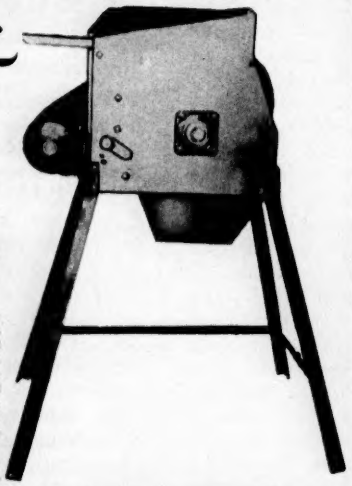
Bateman's New Low-Cost

ROYAL

Model 50

ICE

CRUSHER



Operates on a ¾ HP., motor. Grinds 50 lbs. in 30 seconds. Makes a very good fine ice. Has all fine teeth for making the small ice that is so much in demand. Grate adjustable by turning handle on side of crusher. Chute for filling bags. Gears are incased in gear box and run in grease. Shelf to place ice on before entering hopper. Guard covers flywheel. Will take a regular 50 lb. block of ice. Shaft is moulded into the drum. Galvanized for the prevention of rust. Priced at $250.00 with motor. $185.00 less motor. Belt & pulley furnished. All steel shell, grate handle and legs. Semi-Steel drum and grate.

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Army Consolidates Storage

UNDER a program now being carried out by the Department of Defense the Army will consolidate storage facilities and cease operating 17 supply depots over the next two years. A total of 39 million square feet of space is involved, about half of it uncovered storage space. Not all of this space will be taken out of operation however. All of the covered space will be taken over by the Air Force and General Services Administration or used by the Army or Department of Defense for other than storage purposes. The Army says it expects to save $30 million a year by this change.

Dairy Plant Burns

A FIRE, punctuated by light blasts from breaking ammonia pipes, destroyed the ice cream plant, the warehouse and the refrigerating plant of the Red Top Dairy Co. in Vallejo, Calif. Damage was estimated at $100,000.

Ice Cream Plant Addition

GENERAL Ice Cream Corp. has received a permit to build a $495,000 addition to its Hartford, Conn. plant.

NARW Issue Bulletin on Associate Members

A SPECIAL bulletin featuring associate members has been distributed by the National Association of Refrigerated Warehouses, describing briefly their products and services. The continuous cooperation they have shown, it states, has contributed greatly to the industry's growth. All associate members were invited to submit information for this special bulletin and the information presented was taken from the material submitted.

Orange Juice Purchases Up

SHARP increase in purchases of frozen concentrated orange juice, fresh grapefruit, and canned grapefruit juice were the outstanding developments in household purchases of citrus products during September 1954, compared with a year ago, according to the Agricultural Marketing Service of the U.S. Dept. of Agriculture.

A rise in frozen concentrated orange juice purchases more than offset smaller purchases of fresh oranges and canned orange juice during the month.

NAPRE Convention

(continued from page 34)

ing president. Each officer was called to the rostrum and charged with his responsibilities by Past President Vivien. This installation followed the dinner.

Replying to his predecessor's instructions, newly elected President Regis Gubser, accepted office and then presented the retiring head with and engraved and embellished plaque, (fig. 8) citing Mr. Vivien for his meritorious conduct in office and for the progress shown during his term. Following these honors, all enjoyed dancing to the music of Al Bellanco, a member of New Orleans Chapter, who conducts the dance orchestra as a hobby. Mr. Bellanco, an employee of the Reilly-Benton Co., New Orleans, was earlier commissioned to write an official song for NAPRE.

Food Plant Cold Storage

A NEW cold storage plant will be erected by Gerber Baby Foods at Rochester, N. Y. as part of a long range expansion program, according to Stephen S. Nisbet, vice president of the company.

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BB BRAND
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Anhydrous Ammonia
Cupric Chloride
Ammonium Bicarbonate
Anhydrous Calcium Chloride, purified

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29TH AND GRAY'S FERRY ROAD
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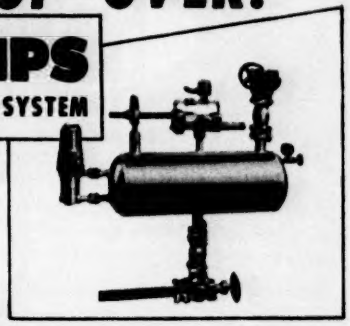
NO SLOP-OVER!
PHILLIPS
LIQUID RETURN SYSTEM



● SAFEGUARDS Compressors
● ASSURES Economical Operation with Full-flooded Coils

Here's the proved method of protecting ammonia compressors from the damages of liquid slop-over. Phillips Liquid Return Systems effectively return refrigerant liquid from a suction line trap to the liquid receiver or liquid line—and, effect savings in operation. With a Phillips System, full flooding of coils is possible for maximum efficiency of evaporation and properly-conditioned suction gases are assured.

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For "Freon"— 1 to 1000 Ton Cap
For Ammonia— 1 to 2000 Ton Cap

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MASON EMANUELS CO. • 1000 Fourth Ave., South, Seattle 4, Wash.

Mobile Trailer Carries Refrigerated Dairy Products

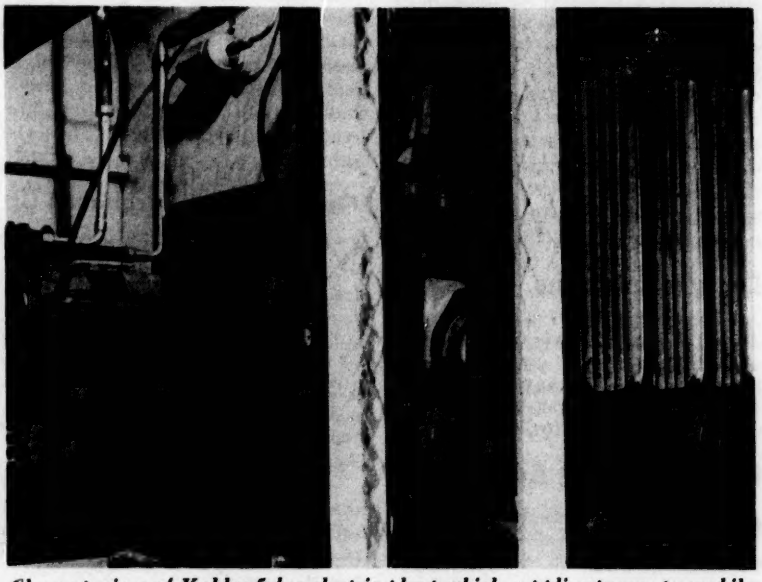
THE Tip Top Creamery Division of Beatrice Foods Co., Vincennes, Ind. has been operating for more than a year a 30-foot trailer with a completely mobile refrigeration system in it, and has plans under way for adding two similar units to its fleet.

The condensing unit employed is an R.C. 200 Kramer Trenton Unicon, mounted high in the center nose of the trailer. A C.M. 265 Kramer Coolmaster Coil is used for evaporating in the loading compartment, and a battery for starting the generator supplying power to the refrigeration equipment is mounted on the floor under the condenser.

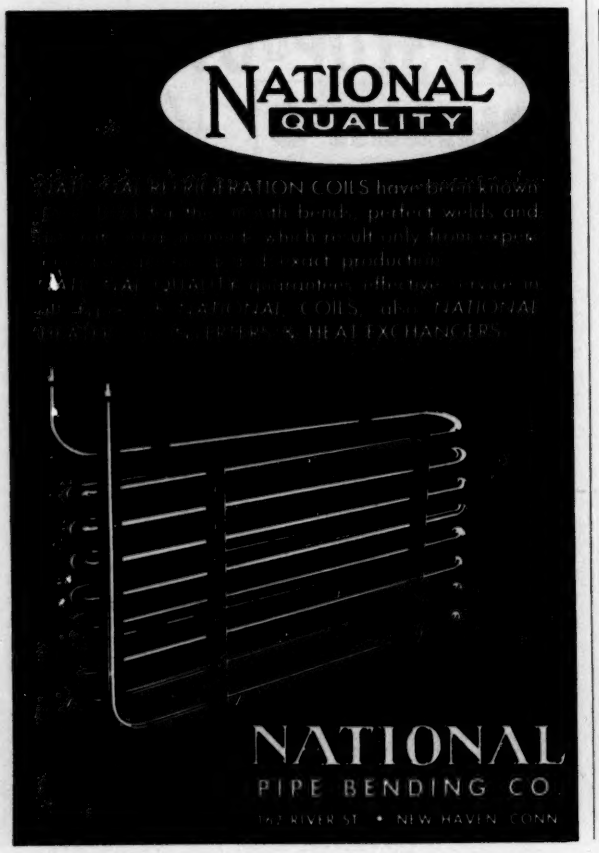
Power for operation of the unit when in transit comes from a Kohler 5 kw electric plant mounted on the driver side of the trailer which is grilled to allow sufficient air flow to the radiator. The compressor is connected to the electric plant when the trailer is on its run or to the main power supply at the creamery, with the help of a small transformer, when the trailer unit is at rest awaiting processing of its load.

Temperature is controlled thermostatically, allowing the electric plant to idle when the unit load is off. This system permits a rapid pull down and an even load temper in a short space of time. Because of the simplified mounting every part is accessible to the service man.

Electric plants used by Beatrice Creamery in its mobile units are manufactured by Kohler Co., Kohler, Wisconsin, which offers a wide range of units for independent, portable or stand-by use and with output ranging from 1500 watts to 30 KW. Remote or automatic starting controls are available as are a number of other optional features including AC or DC and air or liquid cooling.



Close-up view of Kohler 5 kw electric plant which supplies power to mobile refrigeration system of Beatrice Creamery Company trailer.



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ICE VENDORS FOR EVERY REQUIREMENT
Ice-A-teria will vend block or bag ice 24 hours a day for those extra SALES!
Perfection-Made MILLER 300 lb. model scores 50 tons of ice per hour. It's the lowest priced heavy-duty scoring machine on the market today.
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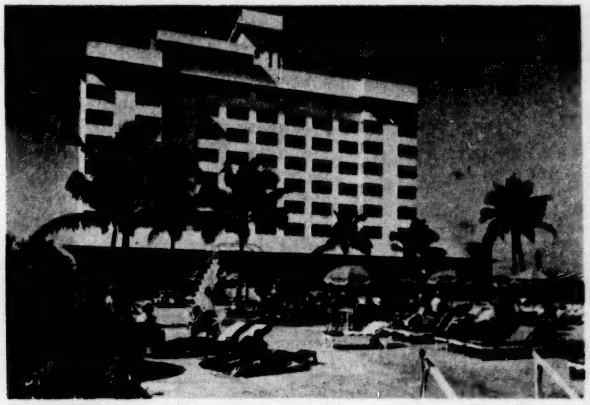
ICE SCORING MACHINE CO.
SCORING MACHINE PARTS AVAILABLE FOR IMMEDIATE DELIVERY
P.O. Box 2140, Fort Worth, Texas

Kirkeby Resort Hotels Add Air Conditioning

THE Kenilworth Hotel at Miami Beach, Fla., one of the Kirkeby chain, was built in 1948 as a seasonal hotel, to be open only for the months of November through April. Today, Miami is an all year round resort area. At the time the hotel was built, the former owners made no provision for installing any air conditioning equipment nor made allowances for risers for the distribution of conditioned air to the guest rooms or public spaces.



Above: Kenilworth Hotel, Miami Beach, recently completely air conditioned

Right: The new Biltmore-Terrace, sister hotel to the Kenilworth, required 300 tons for 250 rooms

After Arnold S. Kirkeby purchased the hotel, he decided to keep The Kenilworth open during the whole year, and to do this, air conditioning was a must. The installation problem involved: how many rooms would be put out of service; the length of time involved; the inconvenience to hotel guests; where to locate the ducts and recirculating ducts; and where to locate the machines and equipment. As supervising chief engineer of the Kirkeby Hotels, it was the duty of Erich B. Utescher to get the best possible system for the investment, and to plan the installation with the least possible revenue loss.

York Equipment

York Corporation equipment was chosen, and guest rooms and public spaces such as lobby, restaurant, cocktail lounge, terrace lounge, card room, barber shop and beauty parlor were air-conditioned. The system was installed by Hill-York of Miami, Fla. It consists of six sets of chilled water coils and fan units with refrigeration supplied by two 75-ton and two 25-ton high speed reciprocating compressors. The compressors were installed in the basement of the hotel, together with all of the condensers and water chillers. The condensers and all of their auxiliaries were of Admiralty metal since salt well water is used.

Salt Water Condensing

By using Admiralty metal and sea water, a cooling tower on the roof was eliminated, saving this installation and pump costs, plus operating costs for pumping water from the equipment in the basement to cooling tower on the roof. All equipment was installed in duplicate and cross-connected so that if one machine or one of its auxiliaries fail or repairs have to be made, the system will never be down 100 percent.

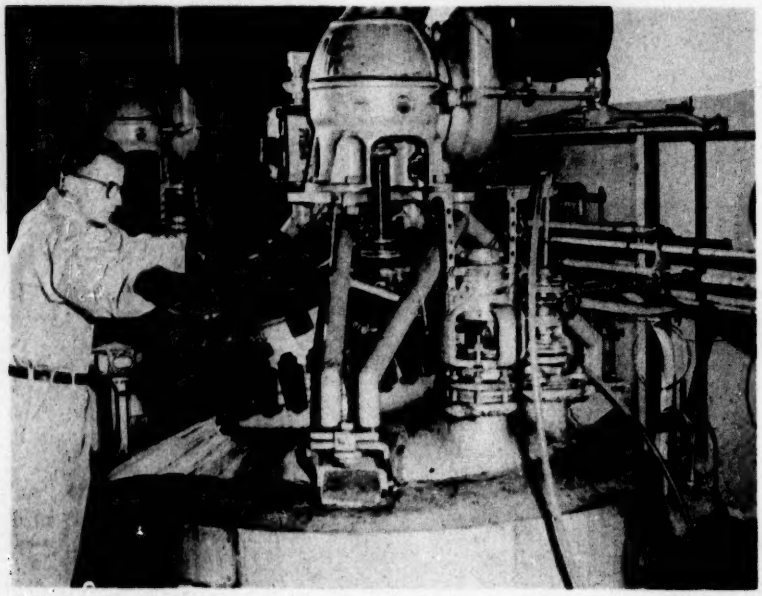
The lobby and restaurant have their individual chilled water and fan blower units. The guest room units were divided; one for the east side guest rooms and one for the west. Either side may be operated independently. The terrace dining room has its own unit; and the bar and cocktail lounge its own apparatus. The duct work for the guest rooms consists of ten vertical risers, five in the east section and five on the west side, and were either installed vertically through the closets or in a corner of the room. Horizontal branch ducts were installed to the rooms on either side of these vertical ducts on each floor.

The units are installed in the penthouse and the conditioned air is directed downward for distribution to the guest rooms. All guest room doors are the slotted panel type which permits air to pass from the rooms to the corridor and a common opening or recirculating duct, and thence back to the penthouse fan units. All other fan units are located either in the basement or on the first floor close to the public rooms and spaces which they supply. All guest rooms have individual dial controls to regulate the temperature as the guest desires.

The Biltmore Terrace Hotel is just about one year old, built in 1953 with 250 guest rooms, large meeting room, sun lounge, deck terrace, Cabana Club, dining room and coffee shop. Three 100-ton Worthington reciprocating high speed compressors provide the necessary refrigeration for the air-conditioning system. A fresh water cooling tower on roof with make-up from city source, cools the condensing medium. The system has a single chiller from which chilled water is pumped to all coil-fan units from which distribution ducts carry cold air to the rooms and public spaces.

Standard Operation of Refrigerating Equipment Revised to Meet New Need

SOME industrial plants have a standard refrigeration service set up to meet their specific needs, which serves its purpose perfectly until some new product or new process comes along calling for a different refrigeration technique. This creates a problem of whether to install special equipment or whether to change all of the old equipment to take care of this new need.



Modern drug-making techniques call for modern equipment and first-class know how.

Ciba Pharmaceutical Products, Inc., of Summit, New Jersey, had such a problem involving the temperature of their plant-wide brine supply. For years they had used −14 C brine to do all the cooling of their various drug batches. It was standardized, mass production was possible, and operations were uniform.

But then they wanted to manufacture a new drug, and part of the final process was to cool the batch overnight in a 500-gallon, glass-lined kettle. The temperature had to drop from 70 C to 0 C. The freezing point of the batch was minus 3 C, and the brine, of course, was minus 14 C. That was the problem then—how to cool (not freeze) the batch, and obtain uniform results.

The use of industrial controllers was suggested, and a temperature controller was installed on the kettle. Its remote bulb was located in the batch, and when the temperature got down to 0 C, the controller shut off a valve in the brine inflow line.

But what happened was that ice formed for one or two inches around the inside of the kettle wall. And in another part of the batch—at the top of the kettle, for example—the temperature was *above* 0 C. It was obvious that with the equipment set up the way it was, the drug was not being uniformly cooled.

J. W. Drew, a chemical engineer at the plant, realized that something had to be done, not only for the case at hand, but for future cases. New drugs shouldn't be kept out of production merely because of inadequate services for manufacturing them. And yet, this engineer was hesitant to recommend solving the problem by maintaining additional brine supply at another temperature or installing a new method of cooling. Also, it crossed his mind that new drugs were yet to be developed that would have different freezing points from any with which they'd previously dealt.

Mr. Drew felt that the alternate methods of additional supply or system replacement were insupportable. What he did instead was to turn his attention to the temperature of the brine coming out of the kettle overflow pipe.

He moved the remote bulb of the temperature controller to the brine exit pipe and left everything else the same, i.e., the temperature controller would still shut off the supply of minus 14 C brine when the temperature of the exit line reached 0 C. This is easily managed by installing a by-pass around the valve.

When the cooling begins—starting at 70 C, the temperature of the exit brine is somewhat above 0 C. As the temperature of the batch comes down—approaching 0 C, the exit brine will also reach 0 C. When it does, the inflow supply will be shut off. But, as experience proved, the temperature of the batch at this time isn't 0 C. Therefore, one must assume that there is still heat in the batch and the brine will absorb it. This is actually what does happen. The brine gets warmer until its overflow temperature is above 0 C; then the supply is turned back on again.

The process continues until balance is attained and the temperature of both batch and brine is 0 C. There's plenty of time, too, after the balance has been attained, for any ice that may have formed in the kettle near the inflow line to melt. When morning comes, the batch is uniformly cool and there's no ice to impede quick drainage.

As a result of the installation of this control system, Ciba Pharmaceutical Products can maintain their supply of minus 14 C brine as long as it serves a majority of purposes, yet they are able to meet any of the requirements of cooling special batches.

Reprinted by permission of Minneapolis-Honeywell Regulator Company.

Deciduous Fruits Report

THE commercial crop is forecast at 102,313,000 bushels, 792,000 above the estimate of August 1. in 1953, 92,877 bushels were produced and the 10-year average is 105,802,000 bushels. The peach crop now estimated at 60,881,000 bushels, six percent less than 1953 crop and nine percent less than average. The pear crop is placed at 29,297,000 bushels, slightly above the 1953 crop of 29,081,000 bushels but four percent below average. The grape crop is estimated at 2,700,900 tons, two percent above the August 1 forecast and slightly above the 1953 production of 2,696,000 tons. The 10-year average is 2,951,000 tons. Prospects for the 1954-55 citrus crops continue good in nearly all producing areas of the country. (USDA reports as of September 1)—NARW Cold Facts.

Suggestion System Creates Usable Ideas

ROBERT H. BRATNOBER
Central Warehouse Co., St. Paul, Minn.

WE THINK we have found the answer to a general improvement of warehouse operations by encouraging our employees to "think in terms of management". This is accomplished through the medium of suggestion cabinets which are installed at various locations throughout our plant. Placed in these cabinets each week are posters which direct the employee's attention to various phases of our business. Each cabinet contains a supply of suggestion blanks, and a box in which to deposit them. The blanks are consecutively numbered so that the employee need only detach a stub to identify himself.

Suggestions fall into two categories, tangible and intangible. For the tangible where we can compute the savings to the company, we are making a cash award of a fixed percentage of the first year's savings. For the intangible, a scale of cash awards, is set up according to the respective merit of the suggestions.

Interest is maintained in the system by acting on suggestions promptly, and this is accomplished by the use of reply tickets that are placed on the lid of the suggestion box.

The system actually is simplicity itself and takes very little time to operate once experience has been gained. Ours has been in operation for only three months and the suggestions we have received thus far indicate increasing interest among our employess and of great value to our company. Recently we received a suggestion showing how we could save two man hours per day by simply changing our system of locking and unlocking doors during the course of the day, i.e. in the morning, at noon, and again at night. Our estimate of the time saved was less than the suggestors, so in adopting the suggestion, we decided to pay a $20.00 reward to begin with, and if the suggestion proved to be worth more than we anticipated, we would increase the amount. This was explained to the suggestor who was very pleased with the reward. This suggestion, incidentally, came from one of the employees whose job it was to lock and unlock doors.

We have received numerous other suggestions concerning many phases of our business that have taught us the real value of the suggestion. In installing the system, we not only have helped to cut costs of operation, improved working conditions, and increased plant safety, but more fundamentally we have provided a means for expressing ideas that might not otherwise be expressed, a means of providing ourselves with a constant check of supervisory personnel, and finally, a means of identifying the individuals in our organization who are of promotion-type caliber—NARW "Operations Supplement."

Refrigerated Display Boosts Sales of Dried Fruits

REFRIGERATED display of dried fruits has brought a 500 percent increase in sales volume and has won several national prizes for the Boy's Supermarket at Denver, Colo. according to owner Henry Goldhammer.

The first step taken was the conversion of an old refrigerated display case, actually two cases, into a 4-sided, completely-enclosed display unit in the right rear center of the store. The big case is waist high and is composed of a series of sliding glass doors and windows, slanted back at an angle of 15 degrees, opening on the interior. All four sides are used for display, and the case is large enough to stock some 30 varieties of dried fruits and such allied specialties as dates, figs, glazed fruit, candied fruit, and tropical fruit.

THERMOBANK
FOR
Ammonia
by KRAMER
THERMOBANK
the defrosting system that makes Ammonia SHINE!
LUCERNE MILK COMPANY, of Los Angeles, Calif., modernized with KRAMER AMMONIA THERMOBANK automatic defrosting system to end years of expensive manual defrosting.

"BEFORE" photo shows iced condition of the old overhead coils.

"AFTER" photo, same room, modernized with KRAMER Ammonia THERMOBANK at minus 25° F; 6400 gallons hardened daily.

INSTALLED BY ASSOCIATED REFRIGERATING ENGINEERS, LOS ANGELES, CALIFORNIA.

WRITE NOW FOR BULLETIN TA-182

KRAMER TRENTON CO.
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SPECIALISTS IN
Automatic
ICE HANDLING AND
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WEIGHER & BAGGER
Controlled uniformity . . . portable or permanent . . . handles up to 6 tons per hour.

Best and most economical method known to close bags . . . fully automatic.
BAG SEWING MACHINE

PERFECTION and S & S
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24 Hour Service with ice block or package vendors for every requirement.

Write for Complete details.

COMPLETE SUPPLIERS TO THE ICE INDUSTRY

OHIO
SPECIAL
ICE CANS

WELDED — RIVETED
ICE CAN GRIDS

Industrial Trucks
and Trailers

THE OHIO GALVANIZING & MFG. CO.
NILES OHIO

Frozen Strawberry Pack Shows Decrease

EXCLUSIVE of California, the 1954 pack of frozen strawberries amounted to 128,038,422 pounds, according to a preliminary tabulation by the National Association of Frozen Food Packers. This pack was about eight percent smaller than production in 1953. Current estimates indicate the California pack this year, still in progress, will approximate the 1953 pack, and on that basis, national production of frozen strawberries in 1954 will be about five percent short of the total pack last year, which was 226 million pounds.

The preliminary tabulation for 1954 indicated changes in the volume of production in various regions, even though the general pattern conformed generally to that of last year. As had been expected, sharply reduced packs were reported both in the Northeast (principally New York and Pennsylvania) and in the Midwest (principally Michigan). In the South, the pack was a little greater than in 1953, but still continued at a relatively low level as compared to earlier years. The pack in Western states, exclusive of California, declined about four percent, but even so, production in this region reached a total of nearly 98 million pounds and represented about three-fourths of the United States total outside of California.

The pattern of container-size usage in 1954 also conformed generally to that of 1953.

The 1954 Spring Pack of Frozen Spinach

THE spring pack of frozen spinach this year was 43,198,061 pounds, according to a survey by the National Association of Frozen Food Packers. This 1954 total is about 35 percent smaller than the spring pack of 1953, and well below any spring pack of Frozen Spinach since 1950. All major producing regions showed sharp pack reductions from last year.

The pattern of container-size usage was significantly different from last year, since the bulk of the pack reduction occurred in retail sizes. The retail pack in the spring of 1953 was almost 52 million pounds; this year, the total for retail sizes was less than 31 million pounds. The pack in small institutional sizes declined more moderately.

And there was a continuation of the trend towards smaller container sizes for the retail pack of Frozen Spinach. The 14 oz. size in 1952 represented the bulk of the retail pack, and in 1953 this size still accounted for an important part of the retail total. But this year the pack in the 14 oz. size was small, representing less than 10% of the total retail pack. In 1954, the 10 oz., 11 oz. and 12 oz. sizes accounted for most of the retail pack.

Dayton Cold Storage Expands

A $275,000 expansion program to add 25 percent to the facilities of the Terminal Cold Storage and Ice Co., Dayton, Ohio is now under way, Henry J. C. Brenner, president, announced. Construction of a two-story brick, concrete and steel building 90 feet wide and 100 feet long will be completed shortly after the first of the year. The addition adjoins other buildings on the west.

The cost estimate on the expansion includes the building construction, the heavy insulation needed for a facility of that type and the equipment in the plant. Mr. Brenner said the new facility will add about 270,000 cubic feet of cold storage space, all on the first floor level. A like capacity can be added at a later date on the second floor.

Preliminary Pack Report for Frozen R.S.P. Cherries

THE 1954 pack of Frozen R.S.P. Cherries reached a total of 86,480,876 pounds, according to a preliminary tabulation by the National Association of Frozen Food Packers. This total is approximately 25 percent short of the record pack of 115,241,575 pounds put up last year.

Following the established practice, the bulk of the pack this year went into 30 lb tins. About 94 percent of the total was in 30 lb tins, with most of the remainder in retail sizes. There were small packs in 10, 15 and and 50 lb and barrels. The regional pattern of production shifted somewhat this year. The Midwest total fell down sharply, while New York showed a small increase and the packs in Pennsylvania and in Western states advanced significantly.

This preliminary report is based on reports issued by the New York State Canners and Freezers Association, the Pennsylvania Canners Association, the Michigan Canners and Freezers Association and reports received by The National Association of Frozen Food Packers from individual packers in West Virginia and Western states.

COMING CONVENTIONS

MISSOURI VALLEY ICE MFRS. ASSOCIATION
January 10-11, 1955
Hotel President, Kansas City, Mo.
A. V. ESPHORST, Secretary

OHIO ASSOCIATION OF ICE INDUSTRIES
March 28-30, 1955
Biltmore Hotel, Dayton, Ohio
ELIZABETH SHANNON, Secretary

INDIANA ASSOCIATION OF ICE INDUSTRIES
March 28-30, 1955
Biltmore Hotel, Dayton, Ohio
ROBT. WALTON, Secretary

SOUTHERN ICE EXCHANGE
February 22-23, 1955
Dinkler Plaza Hotel, Atlanta, Ga.
MILDRED NICHOLS, Secretary

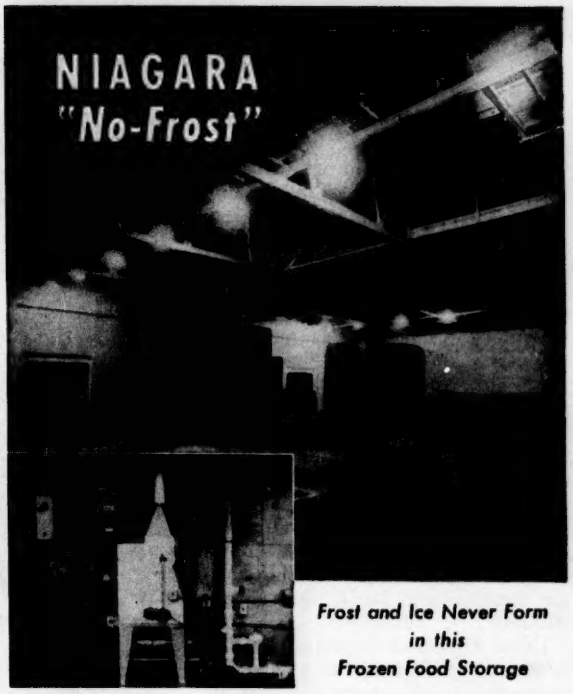
GEORGIA ASSOCIATION OF ICE INDUSTRIES
February 22-23, 1955
Dinkler Plaza Hotel, Atlanta, Ga.
MILDRED NICHOLS, Secretary

NATIONAL EXPOSITION OF POWER AND MECHANICAL ENGINEERING
December 2-7, 1954
Commercial Museum & Convention Hall, Phila., Pa.
E. K. STEVENS, Manager

DELTA STATES ICE ASSOCIATION
December 5-7, 1954
Buena Vista Hotel, Biloxi, Miss.
R. N. MILLING, Secretary

HEATING AND VENTILATING EXPOSITION
January 24-28, 1955
Commercial Museum & Convention Hall, Phila., Pa.
E. K. STEVENS, Manager

AMERICAN WAREHOUSEMEN'S ASSOCIATION
April 12-16, 1955
Edgewater Beach Hotel, Chicago, Ill.
WM. K. DALTON, General Secretary



Frost and Ice Never Form in this Frozen Food Storage

SAVE TROUBLE AND EXPENSE EVERY DAY IN PRE- COOLING, FREEZING AND STORAGE; PROTECT FRESH OR FROZEN FOOD QUALITY

The Niagara "No-Frost" Method gives you always the full capacity you paid for in your refrigeration, NEVER, not even partially, interrupted for defrosting. You can handle large "live" loads easily. The controls are simple and always give you accurately the temperature and humidity you want. Temperatures never rise to interrupt the "pull-down". You are free of troubles; your rooms stay clean and sweet with easier maintenance and less labor. You save power; your compressors run at higher suction pressures. For every refrigerated room for temperatures below 32° F. this method gives you better product quality at lower operating costs. Many of the finest installations in the industry, both large and small, prove the benefits of the Niagara No-Frost Method.

Write for the No-Frost story and data on its application to your problem. Ask for Bulletin No. 105.

NIAGARA BLOWER COMPANY
DEPT. IR-405, LEXINGTON AVE., NEW YORK 17, N. Y.

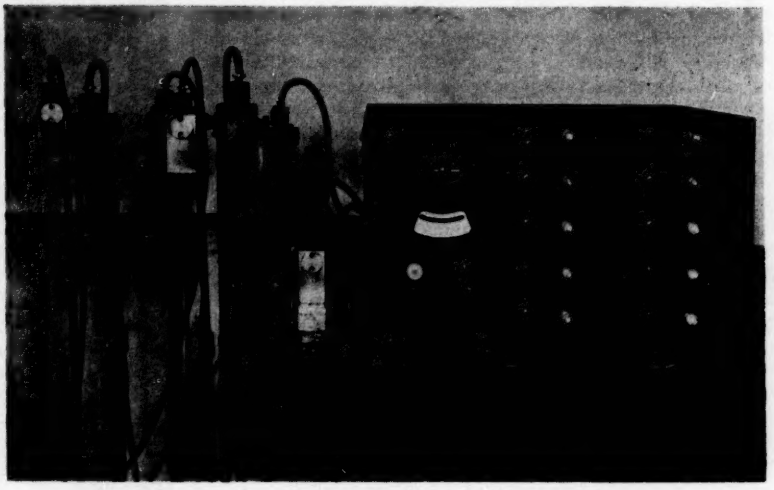
OVER 15 YEARS OF SUCCESSFUL EXPERIENCE PROVES THE VALUE OF NIAGARA NO-FROST

Portable Meter Shows Air Infiltration

A PORTABLE air infiltration meter designed by C. W. Coblentz of the National Bureau of Standards provides an improved means for determining the rate of air infiltration between different rooms of a building and the outside.

In the past, precise infiltration measurements have been restricted to laboratory installations because the equipment was cumbersome. The NBS instrument, however, being portable and compact, lends itself well to field investigations. It can be employed for tests in buildings without greatly inconveniencing the occupants and is expected to be of value in obtaining more comprehensive and precise data than those now available on that part of heating and air conditioning loads incident to infiltration in buildings.

Using a method developed by W. G. Marley of England, the change in concentration of a tracer gas, due to infiltration of outside air, is measured as an index of the air change rate. Since it has been shown that the number of air changes occurring during a given time is equal to the natural logarithm of the ratio of the tracer gas concentration at the beginning and at the end of the time interval, absolute concentration measurements are unnecessary. Only the percentage change in concentration need be measured, and this can be determined readily by noting the change in thermal conductivity of the tracer gas-air mixture as the test progresses.

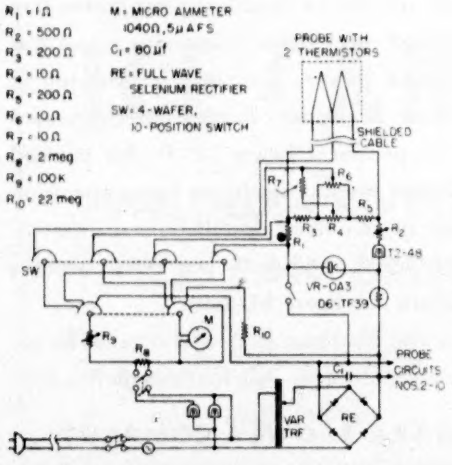


The NBS air infiltration meter with the several metal probes and the ten station central console.

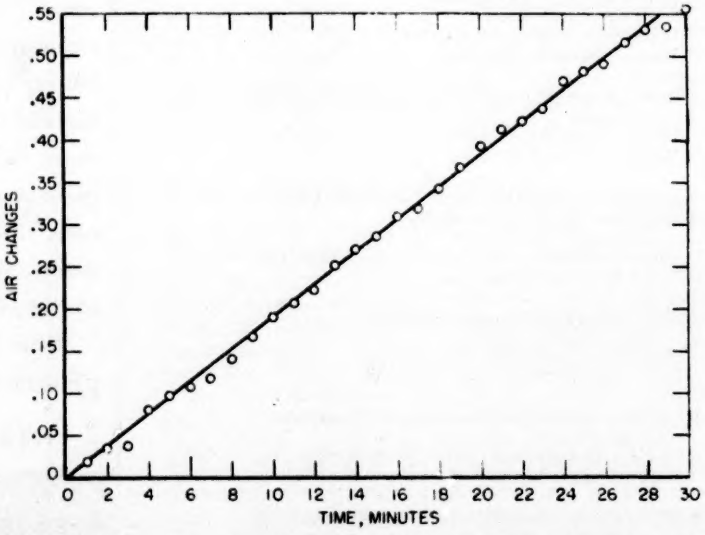
It was found that helium is very satisfactory as a tracer gas because of its high thermal conductivity compared to air. Small changes in helium concentration result in significant changes in thermal conductivity of the helium-air mixture which can be measured with sufficient accuracy using relatively simple instrumentation.

In each probe of the Bureau's meter are two matched and equally heated thermistors, which are connected to form two legs of a Wheatstone bridge circuit. They are installed in identical cylindrical cavities of a metal block to provide equivalent heat-absorbing surfaces. One cavity is air-filled and hermetically sealed while the other has small holes at the top and the bottom. This cavity is continuously ventilated through the holes by natural convection induced by the heated thermistor. Since the thermal conductivity of helium is about six times that of air, the thermistor in the ventilated cavity will be cooler than the other by an amount dependent on the quantity of helium "contaminating" the air.

The resulting change in the temperature of the thermistor causes an



Schematic diagram of one of the ten probes of the NBS infiltration meter showing the Wheatstone bridge circuit, and the rectifier and current stabilizer circuits.



A typical curve of the test results obtained with one probe of the NBS air infiltration meter.

inverse change in its resistance. Thus any significant change in helium concentration, due to infiltration of outside air into the room under observation, unbalances the Wheatstone bridge circuit, and the effect can be read directly on a micrometer.

A practically constant heating current for the thermistors is obviously essential and, to obtain it, a variable transformer is used on the a-c side of a full-wave selenium rectifier. This transformer is manually adjusted to compensate for changes in line voltage, and in the d-c voltage caused by aging of the rectifier, and for variation in voltage drop across the rectifier resulting from use of a different number of probes during each test.

Fluctuations in the line voltage after the adjustment is made are compensated for by using a voltage regulator tube in each probe circuit and by employing a variable resistance tube as the series resistor for the voltage regulator tube. With this combination, line voltage variations in the range from 70 to 120 volts cause less than 0.4 percent change in the thermistor current.

The assembly is designed to simultaneously accommodate ten probes connected to one console. By use of a multi-position gang switch, it is possible to observe the changes in helium concentration in ten different rooms or areas during one test.

Infiltration Measurements

For infiltration measurements, the console is placed at a central location in the building under study, and a probe is mounted on a tripod near the middle of each room several feet above the floor. The probes are connected to the console cabinet by means of cables. After adjusting the heating current, at least one-half hour is allowed for all components to warm up to a steady-state condition. Next, the bridge circuits are balanced by adjusting the balancing resistors so that the meter reads zero in each case. Helium, in the amount of approximately one-half of one percent of the total volume of the space, is then introduced directly into the rooms. Thorough mixing is obtained either by use of desk-type fans or, when available, by means of a forced-air heating system.

Readings are taken from all probes used for the test at intervals of 3 to 15 minutes, depending on the rate of air change. A careful investigation indicates that the meter readings vary linearly with the helium concentrations, and that the accuracy is ample for present purposes, at concentrations less than one-half of one percent of helium in air.

News Broadcast Tells About Government Encroachment

BACKGROUND information supplied by The National Association of Refrigerated Warehouses supplied the basis for an NBC network news broadcast, featuring a graphic account of the government's encroachment upon the warehousing field. Ned Brooks, Three Star Extra reporter, cited the Hoover Commission report, told how the government operates three times as much space as private industry, pointed out that the military is the biggest operator, and cited the enormous tax loss to the Federal Government as a result of government operated warehouses. —NARW Cold Facts

Food Storage Open House

AN OPEN house to celebrate the opening of the modern cold storage plant of Zero Food Stores, Inc., 7007 N.W. 37th Av., Miami, Florida, was held November 20. Heading this company are Milton R. Berger, David R. Schlossman, Viggo Jacobsen.

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Costs of Dry Ice in Refrigerated Truck

THERE are several makes of trailer units on the market employing dry ice under gas and temperature control which, when installed and operated properly, meet temperature performance requirements of a wide variety of perishables including frozen foods, according to a news release issued by the Liquid Carbonic Corp.

A series of tests with one type of dry ice unit has developed operating cost data. They are listed in table below. In each case a 30 or 32-ft. semi-trailer was involved and the loading temperature of the commodity was maintained to the satisfaction of the shipper and consignee. Costs are computed on the basis of four cents per pound for the dry ice consumed. Trips varied from 18 to 93 hours under refrigeration. No defrosting was performed at any time.

These costs were based on a wide variety of commodities, insulation thickness and outdoor conditions. They compare favorably to the five cents to seven cents per mile for the mechanical method as reported by users in recent surveys, or to the 85 cents per hour cost as reported by one of the big four meat packers. It should be noted that several of the tabulated tests occurred during hot weather. Obviously, the same runs in cooler weather prevailing the majority of the year would require less dry ice with a corresponding reduction in cost per mile.

The dry ice method suffers one psychological handicap. Dry ice bills hit the user in the eyes periodically, usually once a month. He forgets that this represents over 99 percent of his overall refrigeration costs. A realistic evaluation must consider all factors influencing costs. Users of dry ice units report that the advantages resulting in a lower overall cost include lower initial cost of unit, absence of high maintenance cost, increased revenue because unit is lighter, quick turn-around of equipment not tied up for servicing, and maximum reliability tough to put a price tag on but conspicuous in peace of mind and reduced claims.

RESULTS OF TESTS WITH DRY ICE IN REFRIGERATED TRUCKS

Cargo	Origin	Destination	Average Loading	Commodity Unloading	Outdoors Low	Outdoors High	Insulation Thickness	Cost per Mile
Frozen Juice	Fla.	Texas	− 7 F	− 1 F	70	94	6 in.	$.039 (1)
Frozen Pork	Texas	Florida	+22 F	+20 F	73	88	6 in.	.048 (1)
Frozen Juice	Fla.	N. J.	0 F	+ 3 F	70	95	6 in.	.044 (1)
Frozen Juice	Fla.	Cal.	− 4 F	+ 3 F	58	98	6 in.	.027 (1)
Frozen Juice	Cal.	Florida	+ 7 F	+ 4 F	52	94	6 in.	.024 (1)
Fresh Meat	Kans.	Cal.	+33 F	+33 F	62	85	3 in.	.033 (2)
Fresh Meat	Ill.	Ohio	+37 F	+38 F	53	67	2 in.	.048 (2)
Frozen Fish	N. J.	Ohio	+12 F	+14 F	48	69	3 in.	.051 (2)
Fresh Meat	Ill.	Mass.	+37 F	+40 F	54	80	3 in.	.024 (2)

(1) Conducted by U. S. Department of Agriculture.
(2) Conducted by R. F. Allyne.

Chicago ASRE Chapter Tours Hubbell

SPECIAL control valves for the refrigerating and air conditioning industry, their design, manufacture and distribution processes, were very carefully inspected by members of the Chicago Section, ASRE, and guests on October 14 at the Hubbell Corporation plant, Mundelein, Ill. A guided tour, part of the current season's educational program, proved to be the most attractive meeting to date.

Charles J. Heinzelman, President, The Hubbell Corporation, entertained the group with refreshments at both a cocktail hour and a steak dinner served from a chuck wagon from a nearby dude ranch. The Hubbell plant was in full operation, enabling all to observe the various steps in production.

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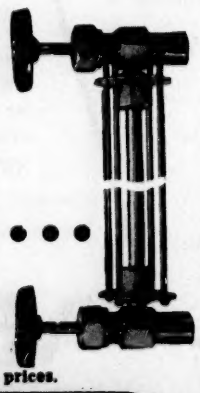
Highest grade non-porous metal—full size ports—clean cut threads. Back seated stem — Shank design base—perfect alignment. Long life packing ring.



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All-Steel Construction. Automatic shut-off of liquid in case of glass breakage. Composition packing rings give long life, no-leak seal.

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A Handy Tool - WRIGHT'S HEAD-BACK PRESSURE CALCULATOR

Actual Size 3½ in. square

The Head-Back Pressure Calculator quickly determines the proper head pressure, for various refrigerants when the suction pressure, room temperature or mean water temperature is known.

Such variable conditions as the suction pressure, room temperature, water inlet and outlet temperature, kind of gas used, etc., all enter in determining the proper head pressure.

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433 N. Waller Ave. CHICAGO 44, ILL.

DEATHS

Robert J. Bailey

THE DEATH of Robert J. Bailey, president of the Union Ice Company, San Francisco, Calif., occurred suddenly and unexpectedly Monday, November 15. Mr. Bailey had headed the Union Ice Company for some 32 years, succeeding M. H. Robbins, himself a pioneer ice man, in that position. Before that he had been employed by the Union Ice Company,

Robert J. Bailey

starting at an early age as a helper on a Union ice delivery truck. During his management the Union Ice Company had built a far flung business organization, with ice and cold storage plants and ice deliveries throughout California.

Mr. Bailey was an active member of the National Association of Ice Industries, served two years as president, as a member of the Board of Directors, and as a member of the Executive Committee. He was well known by all the leading ice men and was recognized as a strong and stable influence in the industry.

H. W. Caldwell

THE death of H. W. Caldwell, veteran ice manufacturer of LaGrange, Georgia, occurred October 2, at Battey Hospital in LaGrange. Mr. Caldwell had had a long career in the ice business and had been an active member for many years of the Georgia Association of Ice Industries.

RICHARD E. HOLMES, chief engineer of the Air Conditioning and Refrigeration Division at Worthington Corporation's Holyoke Works, died October 15. He authored the book "Air Conditioning in Summer and Winter".

Robert Crawford Rankin

THE death of Robert Crawford Rankin, ice manufacturer and former Mayor of Lawrence, Kansas, occurred September 25, after an illness of about six weeks. He was 88.

Mr. Rankin had retired in 1946 from management of the ice plant at Lawrence, which he operated since his father's death in 1913. In his youth he was a page boy in Congress and was in Washington when President Garfield was assassinated. After graduating from Kansas University he went to Oklahoma territory to manage an Indian Trading Post owned by his father.

He was later employed by the Southern Kansas Railroad and the Wells Fargo Express. He was active in civic affairs and many organizations, including active membership in the Kansas Association of Ice Industries and the National Association of Ice Industries.

Harry W. Stewart

THE death of Harry W. Stewart, Public Relations Official with the Consumers Ice Company, Jacksonville, Florida, occurred November 4, 1954, at his home in Lakeland. He was 79.

A native of Girard, Alabama, Mr. Stewart lived as a youngster in Columbus, Ga. His life was spent in the ice manufacturing business in which his father pioneered, having built the first commercial ice plant while superintendent of the Columbus Ice Works. In 1887 he moved with his father to New Orleans where he later entered the ice manufacturing business. He came to Lakeland in 1902.

At the Consumers Ice Company annual banquet November 19, 1952, he was awarded a solid gold lapel pin, the presentation being made before 100 employees, their wives and friends. The pin was awarded in recognition and appreciation to Stewart's loyalty and contribution to the industry.

Mr. Stewart was a Master Mason, a life member of Solomon Lodge 20, F. and A.M., and a member of the Elks Lodge and the National Association of County Officials.

WILLIAM T. WILSON, former treasurer of the Holyoke Ice Company, Holyoke, Mass. died at Holyoke Hospital October 23 after a long illness. Although Canada was his birthplace he came to Holyoke as a young man and lived there until 18 years ago when he moved to Granby. He was 82. He retired in 1950.

News of People

GERALD A. FITZGERALD, well known food technologist, recently returned from two years as Chief, Food Processing Branch, U. S. Operations Mission to Iran. Formerly chief chemist Birds Eye Laboratories, director Frozen Food Foundation, and consultant to food processing industries prior to his Point IV affiliation, he plans to return to the consulting field in product research, development, and quality control. He is a founder member of the Institute of Food Technologists.

JAY H. CATHER, superintendent of the power division, Eastman Kodak Company, Rochester, New York, has been elevated to the grade of Fellow in The American Society of Mechanical Engineers. He has been in the employ of Eastman Kodak during all of his professional career. He began his work in 1912, following graduation from the University of Nebraska with an A. B. degree, and from Massachusetts Institute of Technology with a B. S. degree.

SHEFFIELD A. KADANE has been re-elected chairman of the Southwest chapter of the National Association of Refrigerated Warehouses. The election was held at New Orleans at a joint meeting of the Southwest and Southeast chapters. Mr. Kadane has been associated in refrigerated warehousing for many years and is owner of the Pure Ice & Cold Storage company.

PAUL E. CONRADES, president of The Merchants Ice & Coal Company, St. Louis, Mo. has accepted an appointment to the Citizens Committee for Better Law Enforcement. Primary objective of the committee is to work for passage of an amendment to the county charter to provide for a trained non-political police department in place of the present sheriff-constable system.

AUGUSTUS TAYLOR, JR., has been elected president of the Union Ice Company San Francisco, Calif., effective November 1. Mr. Taylor was elected to fill vacancy caused by retirement of R. J. Bailey.

DAVID B. STEARNS, president of the Milwaukee Cold Storage Company was named chairman of the Great Lakes Chapter of the National Association of Refrigerated Warehouses which met at French Lick, Ind.

MANUFACTURERS' NEWS

Sporlan Valve Appointments

THE Sporlan Valve Company announces the appointment of J. J. Mays to take over it's Dallas sales office. This office serves the states of Texas, Oklahoma, Arkansas, and most of Louisiana. Mr. Mays, a former instructor at Southern Technical Institute in Dallas was actively engaged in air conditioning and refrigeration contracting before joining Sporlan. The company's Dallas sales office is located at 3524 Durango Drive.

J. J. Mays

R. H. Parlin

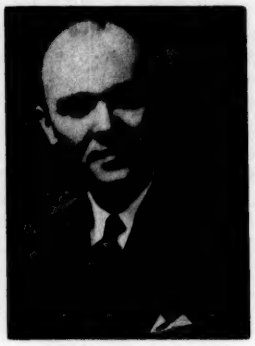
R. H. Parlin has joined the company's field sales organization to take over the newly established Detroit sales office. The company announced that he will represent Sporlan in the state of Michigan and the northern portions of Ohio and Indiana. Mr. Parlin holds a B.S. degree from Ohio University and has an extensive background in refrigeration and air conditioning sales and engineering. The new Detroit office is located at 20479 Dalby Road, Detroit 19, Michigan.

Fork Trucks Leased

THE major fork truck manufacturers now have lease arrangements under which their equipment may be rented for long terms. These arrangements usually include an option to purchase the equipment. Many concerns have turned to renting equipment, such as fork trucks and motor trucks in order to save tying up capital.—NARW Quick Sheet.

Floreth New District Manager for York

THE appointment of John J. Floreth as district manager of the Central District Sales and Engineering Office at Chicago has been announced by The York Corporation. Mr. Floreth was also elected President of Westerlin and Campbell Co., succeeding F. T. Brandt, who has retired.



John J. Floreth

Acme Protection Moves Plant to South Haven

ACME Protection Equipment Company has moved its general offices and factory from Chicago to new headquarters in South Haven, Mich., according to G. M. Glidden, president. This move is in line with the company's current expansion program to step up gas mask and canister production and service to Acme distributors and users, it is stated. The new plant provides 10,300 square feet, more than triple the space formerly available for production. The new building, on a 5-acre tract, is the first plant to be opened in South Haven's new 50-acre industrial development. It includes a complete laboratory, dehumidified areas for storage purposes, and canister filling, production lines on several assembly operations: gravity methods for handling liquid chemicals, and other modern facilities.

Lewis-Shepard Announces New Finance Plan

A NEW financing plan announced by Lewis-Shepard Products Inc., Watertown, Mass. makes it possible to obtain industrial trucks of the L-S line on terms best suited to the industrial customer's requirements. The comprehensive plan includes (1) a broad lease program, (2) a time payment plan, (3) a short-term rental plan, (4) outright purchase, (5) a truck trial plan, and (6) a trade-in program.

With both the equipment lease and time-payment purchase, trucks can be obtained with little or no capital outlay. Short-term rentals are ideal for the many industries which have peak periods and require industrial trucks for only a few weeks or months. No-charge trials enable the customer to check his operation before placing his order, and trade-in allowances allow credit on present equipment.

The type of lease which is of greatest interest to industrial truck users is the short-term "true" lease of three to five years.

Armstrong Names Pearce New Division Head

TO PROVIDE greater concentration of selling effort on its growing insulation business, the Armstrong Cork Company has created a separate Insulation Division

A. E. Pearce

No Clog! No Fog! No Bogging Down! SELF-TENDING!

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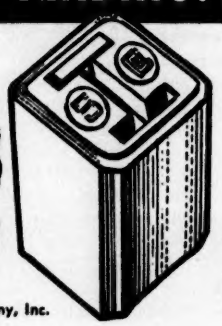
Save Work...Time...Trouble...Money!



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Try Sterling KOOLER KUBES Today! Or, for information, write

INTERNATIONAL SALT COMPANY, INC.
Scranton 2, Pa.

headed by A. E. Pearce as general sales manager, effective November 1. The new Division is composed of two departments; Industrial Insulation, with J. W. Liddell as manager; and Equipment Insulation, headed by L. E. Cover.

H. R. Peck, vice-president and general manager of the Building Materials Division, announced the Armstrong move, which took the form of creating the two new Divisions out of the Building Materials Division. The Building Products Division will handle the company's lumber dealer products and acoustical materials.

Mr. Pearce, a native of Clearfield, Pa., is a graduate of Penn State University. He joined the Armstrong organization in 1927 as a salesman and has held various managerial positions in the building materials division.

Cold Storage Clinic

AN UNUSUAL cold storage clinic sponsored by Owens-Corning Fiberglas Corporation recently in Baltimore, Maryland, was so well received by distributor-applicators attending that the company is contemplating holding others throughout the country. As the two-day clinic progressed, cold storage technician-workmen installed Fiberglas cold storage insulations by various accepted methods in full view of the audience.

In a replica of a cold storage room constructed for the meeting was installation of Asphalt-Enclosed Board against a masonry wall, in T-iron ceilings with an asphalt mastic finish.

CATALOGS AND BULLETINS

New Caterpillar Booklet

A NEW booklet, "Are Your Profits Protected," dealing principally with Caterpillar Diesel Engines and Electric Sets, and emphasizing that dependability and operating costs are of extreme importance to the owner, has been issued by the Caterpillar Tractor Company, Peoria, Ill.

Contained in the booklet are many pictures of Caterpillar Diesel Engines and electric sets at work under various conditions, with testimonials by the owners as to the efficiency and reliability of their units. The reader will also find in the booklet a chart which lists the horsepower and kilowatt ratings of the complete line of Caterpillar Diesel Engines and electric sets.

Handbook on Wooden Pallets

A TECHNICAL publication entitled "Pallets and Palletization" has been issued by The National Wooden Pallet Manufacturers Association, Washington 6, D.C., dealing with design, construction, specifications, maintenance and purchasing of pallets. It is available without charge from pallet suppliers.—NARW Cold Facts

Wiring Manual

A REVISED edition of the remote control wiring manual No. 16-284 has been issued by General Electric. It contains new components recently added to the remote-control line, such as the relay gang boxes, motor-driven master switch known as the "circuit servant," and new locking switches, both flush and surface types, and the new twisted construction, color-coded remote control wire. It contains complete technical and installation data on this low-voltage system of wiring, and is intended for use among production planners as well as by architects, and others.

Kramer Trenton Catalog

PUBLICATION of a new catalog of refrigeration products has been announced by the Kramer Trenton Co., Trenton, N.J. S. Charles Segal, general sales manager. Kramer has designed this new catalog as a quick reference source. In addition to product photographs, dimensional tables, capacity ratings, shipping weight information, and other pertinent information, it includes complete rapid selection tables for both high and low temperature applications.

Classified Advertising

All classified advertisements are payable in advance. Except for Positions and Help Wanted classifications, this section is reserved exclusively for USED equipment.

RATES: 20c per word; minimum 25 words. $2.00 per line for bold face headings; $15.00 per inch for line listings.

Positions and Help Wanted

WANTED — Refrigeration Sales Engineer with broad experience, particularly on ammonia equipment. Only limited traveling required. Liberal commissions against drawing and expense accounts. Midwest Engineering & Equipment Co. 617 Fulton St., Chicago 6, Ill.

WANTED — Refrigerated Warehouse Superintendent for large new plant in South to be opened in February. Not a general manager's situation. Want man experienced in platform and freezer room operations. Write Box DC-2 c/o Industrial Refrigeration, 435 N. Waller, Chicago 44, Ill.

USED EQUIPMENT—wanted & for sale

WANTED TO BUY — two cylinder belt driven 3½x3½ or 4x4 ammonia compressor. Contact Abso-Pure Ice & Coal Co., 138 East 8th St., Peru, Ind. Phone 6655.

FOR SALE — 10 ton ice plant, 10" x 7" Worthington booster compressor, 5x5 Frick, 8x8, 9x9, 4x4, 3 Yorks. Write E. Niebling, 1546 St. Clair Ave., Mt. Healthy, Cincinnati 31, Ohio.

WANTED—Good used 6"x6" or 6½"x6½" York, Frick or Vilter, 2 cylinder ammonia compressor — direct connected or suitable for direct connection by shaft coupling to vertical steam engine, 150# steam pressure. State age, lowest price and location first letter. No junk, please. Yellowstone Park Co., Engineering Dept., Gardiner, Montana.

USED EQUIPMENT—Continued

FOR SALE

3—10x10, 1- 8x8 Frick.
1—10x10, 9x9, 6x6 York vertical.
2—10½x14½; 2- 9½x10½ Vilter horizontal ammonia compressors.
1—150 ton vertical shell & tube ammonia condenser.
2—30 ton single pass brine coolers.
2—low pressure centrifugal blowers.
Assorted lot of ammonia scale & oil traps, flanged valves & fittings. Write us on any equipment you may need.

DAVID BERNARD REFRIGERATING SERVICE
72 Broadway Irwin, Penna.

FOR SALE — Late model 30 ton all York ice plant equipment, complete; bargain for quick sale. Write us your needs. Born Company, 80 E. Jackson Blvd., Chicago 4, Ill. Wabash 2-3299.

FOR SALE — York, Frick, Vilter compressors 6x6, 7½xx7½, 8x8, 9x9, 9½x9½, 10x10, small self-contained units, ice plants, cranes, cans, condensers brine coolers, agitators, blowers, Diesels. Parke Pettegrew, 370 W. Broad St., Columbus 8, Ohio.

FOR SALE

12x12 Frick, 175 h.p. motor.
10x10 York, 125 h.p. motor.
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9x9, 7½x7½ & 5x5 York compressors.
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FOR SALE — Ice plant situated on highway 61-67 at Festus, Missouri; in growing community. 80 tons of refrigeration. 2 Yorks and 1 Frick ice machines, 320- 300# ice tank with ample storage for 2000 blocks of ice. Two Fairbanks Morse 140 h.p. each, needle bearing engines. Three ice vending stations and one at plant just recently installed. Fully equipped. Desoto Dairy Ice & Supply Co., Desoto, Mo.

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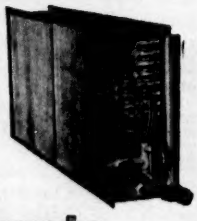

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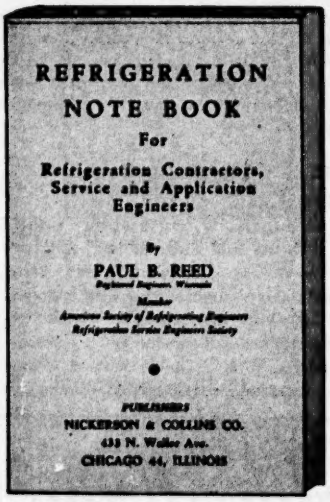
by PAUL B. REED



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204 Pages—Flexible Binding

THIS NOTE BOOK of condensed refrigeration information represents many years of work in accumulating practical data—"culling out" all extraneous material—so as the author states, "the reader will find a handy and easily carried source of information not usually kept in memory."

You will be surprised at the wealth of material that has been included in this convenient and practical reference Note Book. It is written in layman's language, without complicated formulas. In short, it is a tool responsible for the operation of refrigeration equipment.

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OPEN LETTER

to the men who build or buy cold storage space

This is the story of a trend in your business and what's in it for you. The trend is to Fiberglas* for the insulation of cold storage space—here's why . . .

—First, of course, is performance. Fiberglas Insulations are amazingly efficient. Thermal conductivity (k) is as low as .24 Btu at 50° mean temperature, and low heat capacity is a big help in maintaining *accurate* temperature control. Fiberglas has proven its efficiency in large freezer plants and small coolers over the past 15 years.

Performance is good—but there's much more than this behind the swing to Fiberglas.

There's money—money in the form of major savings. For equal or better insulating effectiveness, Fiberglas-insulated coolers and freezers generally cost less to build than structures insulated with other materials. With costs of other insulating materials on the rise, Fiberglas Cold Storage Insulation prices have remained level.

You save on construction costs because Fiberglas materials are light in weight, easy to handle, easy to cut and apply with standard insulation techniques. No basic design changes are needed when you specify Fiberglas for existing plans.

You save on maintenance. By their very nature, all Fiberglas Insulations are ideally suited to the conditions under which they work. Made of fine fibers of glass that are non-absorbent; they will not rot, mildew, warp or expand. They offer no food to rodents or insects, they do not give off or absorb odors. In short, Fiberglas Insulations are as durable, as sanitary as a cold storage insulation can be.

And they're available. No matter what your cold storage needs, there's a Fiberglas Insulation that fills the bill—and you can always depend on Fiberglas to come through with the materials when you need them. What's more, the counsel of well-qualified insulation specialists is always available too, to help you work out *your* design problems.

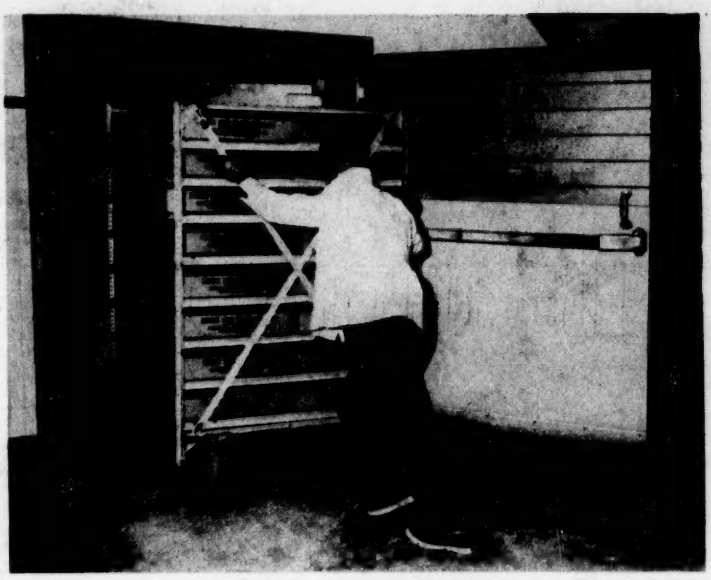
The trend is under way, promising to become a full-scale revolution. There never was a better time to prove out for yourself just how well Fiberglas Insulations measure up to the job of cold storage insulation. Product information and records of outstanding performance over a 15-year period have been put together for you in an informative bulletin. Write: Owens-Corning Fiberglas Corporation, Dept. 165-L, Toledo 1, Ohio. Or pick up the phone and call the nearest Fiberglas branch.

*T. M. Reg. by Owens-Corning Fiberglas Corporation

Allan W. Cox

Manager, Low Temperature Insulation Sales
Owens-Corning Fiberglas Corp.

18 JAMISON DOORS SERVE EFFICIENTLY IN BLAST FREEZING AND STORAGE OF DUCKLINGS

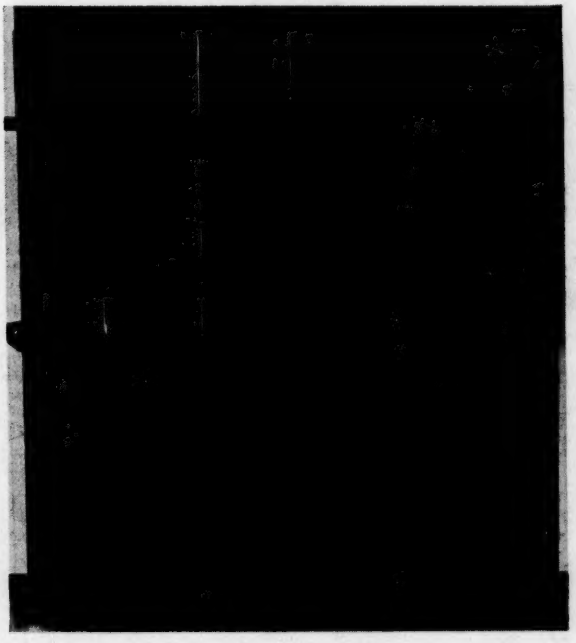


JAMISON SUPER FREEZER VESTIBULE DOORS HOLD DOWN REFRIGERATION LOSSES when packaged ducklings are moved to sub-zero rooms.

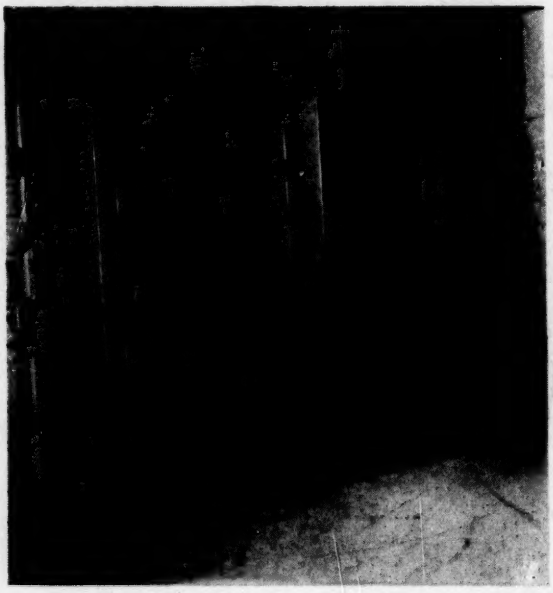
At the Riverhead Duck Processing Cooperative, Inc. in Riverhead, L.I., succulent Long Island ducklings are processed and frozen by the thousands for appreciative gourmets.

One of the ways the Cooperative assures operating efficiency is by using Jamison Doors for the sub-zero blast freezing tunnels and storerooms. Among the 18 Jamison Doors installed, there are 12 Super Freezer Doors, 3 Super Freezer Vestibule Doors, 2 Lo-Temp Doors, and 1 Lo-Temp Vestibule Door.

Jamison Doors of standard or special construction will also meet your needs. Consult your architect or write to JAMISON COLD STORAGE DOOR COMPANY, HAGERSTOWN, MARYLAND.



BATTERY OF JAMISON SUPER FREEZER DOORS maintains a tight seal on sub-zero blast freezing tunnels.



JAMISON
HAGERSTOWN, MARYLAND U.S.A.

More JAMISON Doors are used by *more* people than any other Cold Storage Door in the world.